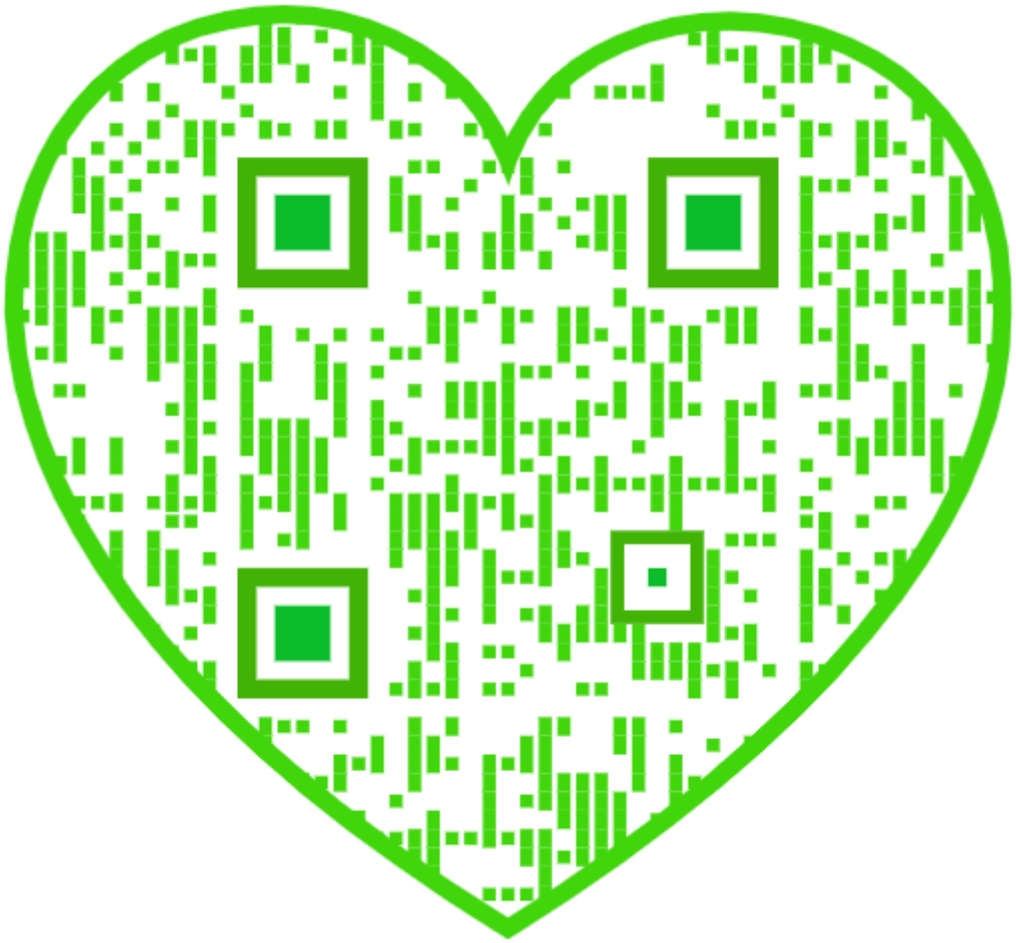

THE

ELEMENTS OF ECONOMICS

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PREFACE

THIS book has been written in response to a demand for a somewhat shorter and more elementary work than the "Introduction to the Study of Economics," which the author brought out in 1897. In order to meet this demand, it was necessary to make a substantially new book, in which the substance of doctrine and the general groundwork remain the same, but the method of treating most subjects has been more or less radically altered. Less space has been devoted to purely theoretical questions and more descriptive and illustrative material has been presented.

It is hoped that the present treatise will meet the needs of a relatively short course for beginners in economics. As the work stands, it is probably extensive enough for the longest courses now given in secondary schools. If it is found too long for some of the shorter courses, the instructor can easily adapt it to the needs of his class by making a few omissions. The first chapter can be treated in an introductory talk or lecture on the first day that the class meets; and the tenth and fifteenth chapters, treating, as they do, topics that are seldom discussed at length in an elementary work, can be readily omitted. With a few changes of this sort,

the book can be adapted to a course of only twelve or thirteen weeks.

The author is under obligations to various friends, colleagues and others, for material assistance in the preparation of this work. He wishes to make special acknowledgment of the aid received from Professor T. N. Carver, particularly in connection with the fifth chapter, and of the constant help received from Mrs. Bullock.

CHARLES J. BULLOCK.

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THE ELEMENTS OF ECONOMICS

CHAPTER I

INTRODUCTION: THE SCIENCE OF ECONOMICS

§ 1. In the year 1900 our twelfth census ascertained that 29,285,000 persons were "engaged in gainful occupations" in the United States. These workers, constituting not quite two fifths of the total population, were employed in a vast number of callings which may be analyzed roughly into the following classes: — Gainful occupations.

Mines, forests, and fisheries	778,000
Agriculture	10,305,000
Manufacturing and mechanical pursuits	6,468,000
Trade and transportation	4,778,000
Domestic and personal service	5,691,000
Professional service	1,265,000
Total	29,285,000

§ 2. If now we subject these statistics to a somewhat closer analysis, it will appear that our farms, mines, forests, and fisheries employ over 11,000,000 persons, who are engaged in producing the foods, fibers, minerals, and lumber required by a nation of 76,000,000 people and their numerous foreign customers. Extractive industries.

In the last census year the gross product of all such industries was not far from $5,000,000,000. Of this amount approximately one fifth was exported to various countries; but other raw materials and food stuffs were imported, the value of which may be placed at $550,000,000. Such were the basic processes upon which the ongoing of American industry depended.

Of the 6,468,000 persons engaged in working up raw materials into finished products, no less than 2,000,000 were employed in the so-called hand trades. These hand workers included 1,200,000 carpenters, masons, painters, and other workmen in the building trades; while the remainder were classified as blacksmiths, wheelwrights, shoemakers, tailors, seamstresses, and the like. The product of their annual labor almost defies statistical measurement, but the very incomplete figures of the census show that the hand trades added some $700,000,000 to the value of the materials upon which the workmen were engaged. The so-called manufacturing industries employed some 4,460,000 persons, and in the census year added some $4,958,000,000 to the value of the raw materials which they used. The manufacture of iron and steel gave occupation to an army of 680,000 men; the cotton, woolen, and other textile industries required the services of 597,000 operatives; 317,000 workers were occupied as bakers, butchers, and millers, or otherwise engaged in the preparation of food; about the same number were manufacturing ready-made clothes, hats, and furnishing goods; some 198,000 factory hands were making shoes or other products of leather; and 165,000 persons were manufacturing liquors or

Manufacturing and mechanical pursuits.

tobacco. These details are sufficient to show the extent and character of the secondary industries which work over the crude materials supplied by fields, mines, or forests.

In order that the foregoing industrial processes might be carried on, it was necessary that 4,778,000 persons should be employed in exchanging products or in transporting persons and commodities. **Transportation and commerce.** Not less than 835,000 people were engaged in wholesale or retail trade, and they required the assistance of 714,000 salesmen. For the work of transportation some 1,346,000 persons were required, of whom 582,000 were railway operatives and 541,000 were draymen, hackmen, and teamsters. In addition to all these, some 1,200,000 clerks, bookkeepers, stenographers, messengers, porters, and other workers found employment in the field of trade and transportation.

The workers so far described were engaged in producing, transporting, or exchanging material commodities; in addition to all such work, the people of the country required the labor of nearly 7,000,000 persons who rendered various services, domestic, personal, and professional. **Personal and professional service.** Some 2,600,000 persons were classified as common laborers; 1,560,000 were employed as servants and waiters; 380,000 were engaged in laundry work; while 620,000 followed the callings of barbers, nurses, housekeepers, janitors, hotel or restaurant keepers, and the like. Then approximately 250,000 people were enrolled in the army and navy, or employed as policemen or firemen in protecting life and property. And finally professional service claimed the labor of

1,265,000 persons. Of these, 446,000 were teachers, 112,000 clergymen, 162,000 physicians or dentists, and 114,000 lawyers; the others were employed as engineers, architects, artists, actors, musicians, and journalists. While these figures may appear large, the whole body of persons engaged in professional callings, and ministering to what may be considered the higher wants of the country, was but slightly more than four per cent of our entire industrial army.

§ 3. All of the occupations which have been enumerated have this one thing in common, that they are modes of activity by which our people endeavor to procure a livelihood. The statistics give a tolerably accurate description of the manner in which the effective labor force of a nation of 76,000,000 people is applied in various industries and callings for the purpose of producing the nation's annual subsistence. Activity of this sort, whenever and wherever exerted, forms the subject-matter with which the science of economics deals; hence we can provisionally define economics as *the science which deals with the efforts of mankind to secure those material commodities and personal services which are needed to support life and to make a civilized existence possible.*

Economic activities and the science of economics.

§ 4. In procuring a livelihood men sometimes produce for themselves the precise goods that they require, as is done by a farmer who draws from his land the greater part of the supplies needed for the support of his family. If all production were carried on in this manner, each family would live in a state of economic isolation and would have little or no business

Household economy.

intercourse with the rest of the world. Under such conditions getting a living would involve nothing more than the prudent administration of a landed estate, and the economist would find no object of study except the simple processes of farm or plantation management. Such, indeed, was the scope of what the Greeks called *economics*, which dealt with nothing more than the administration of private estates,[1] or household economy.

Social economy: industrial society.

But, under modern conditions, production for family consumption is far less common than the production of goods that are intended for the market. Instead of working upon articles destined for their personal use, most men are engaged in making things that are to be consumed by others. All this presupposes the existence of a complex social life in which, through countless acts of exchange, constant commercial intercourse is maintained between producers and consumers. Production thus becomes a social process in which the person who cultivates the soil depends upon the manufacturer, the trader, or the professional man to take his product off his hands and to render in exchange some useful commodity or service. Instead of living in isolated, independent households, men are closely united in a wide-reaching society in which each person is dependent upon his fellows for most of the things needed for the support and ennoblement of life. The economist, therefore, is obliged to study the actions of men who are living in an organized society; and for this reason, economics deals chiefly with social facts and relationships.

[1] The Greek word *οἰκονομία* was derived from *οἶκος*, estate, and *νόμος*, law.

Sometimes, indeed, in order to emphasize this truth, the science has been called social economics.[1]

Other social activities: the social sciences.

§ 5. The life which men live in society is concerned with many other things besides the effort to procure a livelihood. The range of social activities includes marriage and giving in marriage, the formation and maintenance of civil governments, coöperation in educational and religious enterprises, and the organization of a multitude of minor associations of a serious or frivolous character. All these activities may be made the objects of scientific investigation; and many of them have been so studied, with the result that a group of social sciences has been developed. Politics is such a science, dealing with the forms and functions of governments. Jurisprudence is another, and is concerned with the legal rules of conduct which govern social relations. History is a social science which investigates the manner in which men have lived in the past, and undertakes to recall the social life of bygone ages — in the family, the church, the state, and in industrial relations. Economics, therefore, is but one of a number of related sciences that treat of the social experience of the human race.

Sociology.

At various times efforts have been made to develop a single, all-embracing science of society, known as social science,[2] or sociology. It has been maintained that since economic, political, legal, and other

[1] The names "political economy" and "public economy," which also are used — the former much more frequently than the latter, — mean the same thing, viz. that the science deals with the economy of a larger social group, and not the economy of an individual or a household.

[2] The name "social science" has been applied often to the investiga-

forms of social life constantly act and react upon each other, it is impossible to construct separate sciences of economics, politics, and jurisprudence. But attempts to study society as a whole, in all phases of its activity, have not met with much success, because they disregarded the simple fact that the field of investigation is so vast and the facts to be studied are so varied, that some sort of division of labor is indispensable. They resemble, indeed, an attempt to construct a single science of nature, animate and inanimate, in place of the separate sciences of physics, chemistry, biology, geography, and the like. More recently, therefore, the scope of sociology has been narrowed, and it has been defined as "the science of social elements and first principles." The sciences of economics and politics take man as they find him, existing in economic or political relations with his fellows. Sociology, however, when treated as a science of social elements, undertakes to explain the primary facts of human association. It studies the process by which associations of men are formed, investigates the character of social groups, and may deal with the question of social progress.

The divisions of economic science.

§ 6. We have now defined the field of economics and explained its relations to the various social sciences. This book is to deal with the social activities and institutions that result from men's efforts to procure a livelihood. Looking at these things

tion of crime, pauperism, charities, and similar subjects. These topics have not been treated adequately by the other social sciences, and the field is sufficiently extensive for a special science of dependent and delinquent classes of people. The need of inconvenient explanations would be avoided, however, if some other name than social science were employed.

from the point of view of the community, or society, we shall study the means by which nations become rich and the effect of riches upon the public welfare. Beginning with an examination of the needs that impel man to produce useful commodities, we shall next investigate the processes by which production is carried on; then we shall treat of the great process of exchange, and finally shall study the manner in which the product of industry is divided among the various classes of people who have helped to create it. These four main divisions of our inquiry are usually termed the departments of **consumption, production, exchange, and distribution.** In addition to this, we shall consider the ways and means by which governments secure the money or services upon which they depend for support, and here shall touch upon a subject known as **public finance.**

The scope of the science.

This conception of the scope of our science accords with that of the eminent economist, Adam Smith, who published in 1776 his famous "Inquiry into the Nature and Causes of the Wealth of Nations," upon which, more than any other work, subsequent writers have built. "Political economy," he declares, "proposes two distinct objects: first, to supply a plentiful revenue or subsistence for the people, or, more properly, to enable them to provide such a revenue for themselves; and secondly, to supply the state or commonwealth with a revenue sufficient for the public purposes. It proposes to enrich both the people and the sovereign." Although riches are not the sum and end of human existence, and the acquisition of wealth is not the noblest of all activities, our science will be found neither mean nor sordid. Rather

will it appear that the study of economics, while dealing with matters of the greatest practical importance, tends to quicken the love of justice and to encourage sanity and moderation of view concerning the value of material wealth.

CHAPTER II

THE CONSUMPTION OF WEALTH

I. Human Needs: Wealth

§ 7. The principal motive that impels men to produce useful commodities is the desire to consume goods that can be procured only by labor. There are, of course, other motives for industrial effort, such as a mere love of activity or, among men of great wealth, the ambition to dominate large business enterprises; but with the majority of people it is certain that the necessity of procuring consumable goods is the mainspring of economic activity. For this reason we shall make human needs and the consumption of wealth the starting point of our inquiry.

Human needs.

Economics is not concerned with all the possible needs of man's nature, but investigates only those which impel him to secure a livelihood. Of such needs the earliest and most persistent are the desires for food, shelter, and clothing, which we may call man's *existence wants*. With the growth of intelligence and refinement, a multitude of new desires is aroused, and what may be called *culture wants* are gradually developed. These new wants are directed toward things that tend to the enrichment or ennoblement of human life, such as material comforts and luxuries or education, art, and travel.

Existence and culture wants.

§ 8. In an examination of economic needs we should consider *the law of the increase and diversification of human wants*. The lowest tribes of savages are apparently satisfied if they can provide themselves with a few simple kinds of food and such shelter or clothing as the climate renders imperatively necessary; and they begin to progress in civilization when the development of their faculties or the awakening of new desires leads them out of the circle of their original animal needs. In fact the progress of our race from barbarism to civilization can be described not inaccurately as a process of increase and diversification of human wants. When an abundance of the simplest food is once assured, men begin to improve the methods of preparing it and to search for new edibles with which to vary their diet. The same thing occurs with man's shelter and clothing, so that, in the course of time, fine houses and elaborate dress become favorite means of indulging artistic tastes or making an ostentatious display of wealth. With man's higher wants the possibility of increase and diversification is indefinitely great, especially since the pursuit of such things as art or science comes to have for its object the development of one's faculties rather than the satisfaction of the senses. Under such conditions, although the complete satisfaction of some of the lower bodily needs is possible, we can discover no limit to the growth and diversification of our other wants.

The increase and diversification of wants.

§ 9. Everything that has the power to satisfy a human want is said to possess utility; and to such things the economist applies the names "utilities" or "goods." But there are goods that do not come within

Utilities and goods.

the range of economic investigation, which deals only with the subject of procuring a livelihood. Health, friendship, knowledge, and moral worth are among the supremest goods; but they fall primarily to the province of the physician, the teacher, or the moralist — not to the economist, who has occasion to consider them only in so far as they bear upon the main subject of his inquiries, the production and use of the things that constitute a livelihood. Material commodities and personal services are the objects of all economic activity, and it is of these utilities that economics treats.

The utility, or want-satisfying power, of commodities may arise in any one of four ways. An object may be fitted, as, for example, iron ore, to serve as raw material for some manufactured article; in which case it is said to have *elementary* utility. Next, after undergoing changes in form, the iron may be converted into a finished product ready for man's use, and will then possess *form* utility. Again, when transported from the rolling mill or machine shop to the place where it is desired by the consumer, the product acquires *place* utility; and herein consists the whole service which transportation agencies render to society. Finally, many commodities vary in usefulness from one season of the year to another, as is the case with ice and fuel. A person who stores up ice in the winter and distributes it to his customers the following summer creates *time* utility, which is just as important a factor in determining the serviceableness of many things as are utilities of form and place.

The four kinds of utility.

§ 10. To *the services and commodities that are the objects of all industrial effort*, the economist applies the

name "wealth." Economics, in fact, has frequently been defined as "that science which relates to wealth." In common usage this term often means great riches, but such is not the sense in which the economist employs it. To him the poor man's dwelling and the rich man's palace are alike wealth, since they satisfy economic wants. Wealth has been defined also as anything that has the power of commanding other things in exchange — a definition that is accurate enough for most practical purposes, since nothing can be exchangeable if it does not satisfy some human desire. But there are a few economic goods, such as heirlooms, which, having utility for no one except the owner, could not be exchanged for anything else, and yet deserve to be included within the category of wealth. For this reason preference should be given to our first definition. A generation ago wealth was usually defined so as to include nothing but material commodities, and services were excluded from the scope of economic investigation; but such an arbitrary omission of things that form the object of countless business transactions could not be justified, and has been abandoned by most writers. Material goods, whether exchangeable or not, and all personal services by which men secure a livelihood, are the constituent parts of wealth.

Wealth.

II. The Laws of Consumption

§ 11. By the consumption of wealth is meant *the destruction of utilities*. It may have any one of three forms. When utilities are destroyed by a person who derives from them the satisfaction that they were intended to afford, we have an act of *final* consump-

Consumption defined.

tion. When, on the other hand, commodities are used as tools or raw materials in the manufacture of finished products, *productive* consumption occurs; for, although the utility of such goods is destroyed, it reappears in the value of the completed product. Finally, if utilities are destroyed without affording satisfaction to any consumer or aiding in the production of other goods, we have an example of *waste.*

§ 12. Although there is no assignable limit to the increase and diversification of human desires, any particular want is satiable. If a person consumes at any given time successive units or portions of a commodity, he finds that the later units give less pleasure or satisfaction than the first. A small quantity of bread may appease the pangs of severe hunger, an additional amount may meet the needs of a healthy appetite, while a further supply will be eaten with indifference, if at all. If enough bread or enough of most other things is consumed, a point of satiety will finally be reached, at which an additional quantity will yield no satisfaction whatever, and may even cause pain.

Human wants are satiable.

A consideration of these facts enables us to formulate the most important principle governing the consumption of wealth — the law of the variation of utility. It is evident that the different units of the stock of any commodity do not have the same power of satisfying human wants, and that their *utility constantly decreases as the supply is enlarged.* A few units of an article necessary for the support of life will have a utility that is indefinitely great; while additional units, useful as they may be, will satisfy wants of steadily diminish-

Law of the variation of utility.

ing intensity. Upon this law depend some of the most important theorems of the science of economics.

We are now in a position to make a distinction between total and marginal utility. Until the point of satiety is reached, each unit of the stock has a certain power of satisfying wants, which will probably vary, however slightly, from the utility of each of the other units. One of the units must satisfy a want which is less intense than that met by any of the others, and this may be called the marginal unit; while its utility may be called the marginal utility of the entire stock. *Marginal utility, therefore, is defined as the utility of the last,*[1] *or least important, unit of the supply of a commodity;* other things being equal, the greater the supply, the lower the marginal utility will fall. On the other hand, *total utility is the aggregate want-satisfying power of all the units of the entire stock.*

Total and marginal utility.

Little reflection is needed to show that our estimate of the relative importance of commodities for our use depends upon the marginal, and not upon the total utility. A farmer who has harvested 1000 bushels of Indian corn consumes a part of the crop for food, reserves a portion as seed for the next year, feeds a considerable amount to cattle or poultry, and sends the remainder to a distillery, where it is converted into whiskey. Assuming that he is not inordinately fond of strong drink, it is probable that the least important portion of the entire crop is that which is destined for the distillery;

The importance of a good depends upon its marginal utility.

[1] Last, that is, in point of importance. The most important use of salt may be its use on the table; the next, its use in feeding cattle; the last, its use in keeping weeds out of sidewalks. The utility of salt for this last purpose is its marginal utility.

and so long as the annual crop is as large as 1000 bushels, any single bushel is of no more importance to the farmer than the whiskey which can be distilled from it. If the crop of the next year is deficient, no corn may be sent to the distillery; and the marginal utility of the stock may rise to that of the cattle or poultry maintained by means of what is now the least important portion of it. If, on the other hand, an unprecedented harvest should yield a crop of 2000 bushels, the farmer might use some of the corn for fuel, — a thing that has repeatedly occurred in the West when there has been a glut in the corn market. In all cases it is the use made of the marginal unit that determines the importance of any unit of the supply.

§ 13. From the law of the variation of utility and the proposition that the importance of a commodity depends on its marginal utility, we can proceed to another important principle, — the law governing the economic order of consumption. In selecting goods for our consumption, we estimate first of all the marginal utility of the various commodities between which we are to choose. The fact that bread or meat is necessary to support life, and therefore possesses infinite total utility, does not lead us to purchase an indefinite supply of such necessaries of existence. We compare the utility of the least important, or marginal, unit of meat or bread with the marginal utility of other commodities, and select the article which yields the highest marginal utility. For a hungry man who has nothing to eat, bread or meat will have a greater marginal utility than anything else; but a man whose bodily wants are well supplied will prefer to purchase fine clothes, or books, or articles of luxury.

The economic order of consumption.

These things have a smaller total utility than the food which keeps him alive, but to a well-fed man they have greater marginal utility.[1]

Marginal utility and cost.

But the marginal utility of commodities is not the only thing that a prospective purchaser will take into account. A diamond may have greater marginal utility for me than any other precious stone, but before purchasing it I must consider carefully the cost. If my daily wages are but $2, I may never in my life buy a diamond, because its cost is so great that I would prefer some less expensive stone. Evidently a purchaser compares not only the marginal utility of one commodity with that of another, but he also compares their respective costs: in forming a decision, he will determine which article will yield him the greatest surplus of marginal utility above its cost. If, for instance, oranges and bananas are offered for sale at the same price, say twenty cents a dozen, a person who prefers bananas to oranges will certainly purchase bananas, since, the cost being the same, they will evidently yield him the greater surplus of utility. Having purchased a dozen bananas, however, and having thereby lowered their marginal utility, it is possible that, if he makes a second purchase immediately, half a dozen oranges may be selected. To vary the illustration, let us

[1] Early economists, who were not familiar with the distinction between total and marginal utility, were puzzled by the fact that, as Adam Smith put it, "The things which have the greatest value in use have frequently little or no value in exchange." Smith observed: "Nothing is more useful than water; but it will purchase scarce anything. . . . A diamond, on the contrary, has scarce any value in use, but a great quantity of goods may frequently be had in exchange for it." How would a modern economist explain this apparent paradox?

assume that a banana costs five cents while oranges are selling for a cent apiece. Under such conditions a slight preference for bananas, which implies that the marginal utility of this fruit is slightly greater, would not be enough to lead a purchaser to select bananas. Before he will buy the more expensive fruit his preference must be strong enough to overcome a difference of four cents in the cost; and unless bananas have for him a very much greater marginal utility, he will derive the greater surplus of satisfaction over cost by purchasing oranges. *The economic order of consumption, therefore, depends on the marginal utility and the cost of commodities;* and those articles will be selected which yield the greatest surplus of marginal utility above their cost.[1]

§ 14. Since considerations of this sort determine the choices which purchasers make in all markets, we may base upon the principles governing the economic order of consumption a general law of demand. By demand the economist means something more than simple desire; he means desire coupled with the ability to pay. Demand is said to be small when the amount of a commodity that the public will buy is small, and large when the quantity purchased happens to be large. At any given time it will vary according to the marginal utility of a commodity and the cost of obtaining it, *i.e.*, the price at which it is offered. If the marginal

The law of demand.

[1] Under modern conditions the purchaser makes all the estimates in terms of money. To him money represents general purchasing power, and any amount of money, as one dollar, represents a certain fractional part of his income. The purchaser knows what a dollar is worth to him, and he compares the marginal utility of any commodity with the marginal utility of the money required to purchase it.

utility is high, consumers will obtain a larger surplus of satisfaction, and the demand will be large; if the marginal utility declines, on account of changes in taste or fashion, the demand inevitably falls. If the cost of a commodity is great, consumers will derive a smaller surplus of satisfaction from its use, and the demand will be light; if, however, the price is reduced, the surplus increases and the demand improves. *Demand varies directly with the marginal utility of a commodity, and inversely with the price at which it is offered.*

Elasticity of demand.

It remains for us to consider certain peculiarities in the demand for different commodities. With some articles the demand is very sensitive to changes in price, decreasing promptly when prices rise and quickly increasing as they fall. Such a demand is termed elastic, and has the effect of steadying the price of a commodity at times when the supply fluctuates. This is the case with most of the comforts and luxuries of life purchased by the middle classes of our people. If a shortage develops in the supply of such articles, a moderate rise in the price will reduce materially the demand and prevent a great disturbance of the market; while a largely increased supply will be disposed of readily enough if prices are slightly reduced. But with the great staple articles consumed by the masses of the people, the demand is inelastic. Prices of wheat, cotton, sugar, and salt fluctuate very greatly whenever the supply is suddenly increased or decreased, since a slight reduction in price will not stimulate sales enough to carry a surplus out of the market, and a moderate increase will not reduce materially the amount that the people demand.

Elasticity of demand implies that a commodity may be dispensed with, and brings it about that, when such a misfortune as a commercial crisis reduces the purchasing power of the people, the demand for articles of this character will fall off very rapidly. Almost no class of commodities can escape altogether the effects of a period of industrial depression, but it is always the less necessary articles, *i.e.*, those for which the demand is elastic, which are first and most seriously affected. Elasticity of demand, therefore, produces stability of prices when the supply fluctuates, and instability when the purchasing power of the people is reduced.

Elasticity of demand further considered.

For any brief period of time demand may be said to depend simply upon the marginal utility of a commodity and the price at which it is offered, but over longer periods this statement is not entirely adequate. From year to year changes may take place in the resources or purchasing power of the consumers, and such changes are a third factor in determining demand. Obviously, an increase of resources reduces the importance of a dollar to the consumer and affects demand in the same manner as a reduction of price. It frequently happens, therefore, that the demand is greater in years of high prices than in years of low prices caused by industrial depression. From 1894 to 1896, for instance, before business had recovered from the panic of 1893, the average annual price of wheat in New York City ranged from sixty-one to seventy-eight cents, and the annual consumption of the country averaged 296,600,000 bushels. After that, however, times began to improve, with the result that, although the price ranged from

Changes in purchasing power of consumers.

seventy-nine to ninety-five cents, the annual consumption of wheat averaged 349,400,000 bushels from 1897 to 1899. We conclude, then, that it is only for short periods, within which the resources of the consumers remain virtually unchanged, that demand will depend solely upon the marginal utility of a commodity and upon its price.

III. Statistics of Consumption

§ 15. Some of the laws governing the consumption of wealth find interesting confirmation and illustration in statistics of family expenditures which have been gathered by various investigators. The most celebrated of these studies was made by a German statistician, Dr. Engel, and related to the consumption of the working classes of Saxony. Its results are shown in the following table: — **Statistics of consumption.**

Items of Expenditure	Percentage of the Expenditure of the Family of					
	A man with an income of from $225 to $300 a year		A man with an income of from $450 to $600 a year		A man with an income of from $750 to $1000 a year	
	Per cent		Per cent		Per cent	
Subsistence	62.0		55.0		50.0	
Clothing	16.0	95.0	18.0	90.0	18.0	85.0
Lodging	12.0		12.0		12.0	
Firing and lighting	5.0		5.0		5.0	
Education, public worship, etc.	2.0		3.5		5.5	
Legal protection	1.0		2.0		3.0	
Care of health	1.0	5.0	2.0	10.0	3.0	15.0
Comfort, mental and bodily recreation	1.0		2.5		3.5	
Total	100.0		100.0		100.0	

From these figures it appears that, (1) as the income of a family increased, a smaller percentage was expended for food; (2) with every increase of income, the proportionate expenditure for clothing remained approximately the same; (3) with all changes in income, the percentage spent for rent, fuel, and light remained invariably the same; and (4) as fast as incomes increased, a larger proportion was devoted to education, recreation, and miscellaneous purposes. These conclusions are generally known as Engel's law.

Engel's law.

Subsequent investigations in the United States as well as Europe have shown the substantial accuracy of Engel's results. The Seventh Annual Report of the United States Commissioner of Labor supplies us with the following data: —

American data.

Object of Expenditure	Income under $200	Income $300 and under $400	Income $500 and under $600	Income $700 and under $800	Income $900 and under $1000	Income $1200 and over
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Rent	15.48	14.98	15.15	15.60	14.96	12.59
Fuel	7.07	6.04	5.63	4.42	4 00	2.57
Lighting	1.01	.98	.97	.88	.74	.45
Clothing	12.82	14.14	15.27	16.33	16.84	15.71
Food	49.64	45.59	43.84	38.89	34.34	28.63
All other purposes	13.98	18.27	19.14	23.88	29.12	40.05

From all of these figures it appears that about nine tenths of the income of very poor families is expended for the satisfaction of mere existence wants, and that about one half is devoted to the purchase of food. As incomes increase, a larger proportion can be expended in satisfying culture wants,

Significance of these figures.

or can be saved. It is clear that the desires for food, clothing, and shelter are less expansive than the other needs that constantly claim an increasing proportion of the larger incomes. Clearly, also, the desire for better clothes and shelter is more expansive than the desire for improved diet, since the former claims a fairly constant proportion of all incomes, while the latter is satisfied with a steadily diminishing percentage. In general, it is apparent that, as the means of a family increase, a larger surplus of utility can be secured by diversifying the objects of family consumption.

§ 16. Besides illustrating the laws of the consumption of wealth, statistics of consumption furnish convenient data for testing economic prosperity.[1] As Dr. Engel suggested, the percentage of income expended for subsistence can be taken as an index of the material prosperity of a family, and we can consider a small relative outlay for food an indication of greater welfare. But in addition to this we can estimate the comparative well-being of different countries by the aid of statistics that show the *per capita* consumption of various commodities.

Test of economic prosperity.

The relative outlay for meat increases with the income of the average family, and this fact lends considerable interest to the statistics showing the *per capita* consumption of this important article. For England and France the following data are available: —

Consumption of meat.

[1] Dr. Engel "has advanced the theory that it might be possible by a careful study of a sufficient number of family budgets for a period of years to construct a sort of social signal service. His idea is that changes in total expenditures and in expenditures for various items in a sufficient number of typical families would enable us to predict the coming of industrial storms."

PER CAPITA MEAT CONSUMPTION IN KILOGRAMS
(Kilogram = 2.2 lb.)

YEARS	FRANCE	ENGLAND
1812	17	——
1840	20	——
1862	26	——
1868	——	100.5
1882	33	——
1890	——	124.5

The figures show a considerable increase in the consumption of meat, which may be accepted as an indication of greater well-being during the last half of the nineteenth century. They reveal also a marked difference in the amounts of meat eaten in the two countries. This indicates in part a higher standard of living in England; but it is probable that, under conditions of equal well-being, the consumption of meat would be somewhat smaller in France than on the English side of the Channel.

Consumption of cereals.

Of greater interest are the statistics of the consumption of various cereals in the leading countries of Europe, since the grains are much more important than meat as articles of diet. At a comparatively recent date (1890) the showing was as follows: —

PER CAPITA GRAIN CONSUMPTION IN KILOGRAMS

	WHEAT	RYE	BARLEY	MAIZE	OATS
England	154	——	82	15	102
France	256	46	32	25	95
Germany	67	138	56	5	88
Russia	82	242	37	——	117

The most striking fact disclosed by this table is the large consumption of wheat in England and France and the enormous consumption of rye in Germany and Russia. This is due to the fact that the peasants and the town laborers of the latter countries cannot afford to buy white bread, and perforce subsist on rye. In the consumption of barley, maize, and oats the differences are comparatively unimportant. Between England and France a marked difference appears in the amount of wheat and rye consumed, a difference which is probably explained by the larger consumption of meat in England. If statistics were to be prepared upon the same basis for the United States, they would show a generous consumption of wheat, a large consumption of maize,—which, it will be observed, is little used in Europe,—a considerable consumption of oats, and a small consumption of rye and barley.

If a large use of rye bread indicates a lower plane of material welfare, this is still more the case with a large consumption of potatoes. For the countries of chief interest the figures for 1890 stand as follows: — **Consumption of potatoes.**

PER CAPITA CONSUMPTION OF POTATOES IN KILOGRAMS

Ireland . . .	679	France . .	292
Germany . . .	500	England . .	93

Thus the large consumption of potatoes in Ireland indicates, not prosperity, but poverty; and the same is true of the figures for Germany. With England and France something better than a potato diet is shown, the former

country holding a considerably better position than the latter. In all particulars these statistics reënforce the conclusions drawn from those relating to the consumption of grain and meat.

Consumption of sugar.

In modern times the use of sugar has been greatly extended, and this commodity is now an important article in the consumption of the masses of the people. Since 1850 the estimated sugar production of the world has risen from 1,463,000 to 9,475,000 long tons, an increase that far exceeds the growth of population. But this larger consumption of sugar has been very unevenly distributed among the various countries that have participated in it. In France and Germany the price has been kept high by taxation, while a vicious system of export bounties brought it about that French and German beet sugar was sold in England for less than cost. Under such conditions no surprise will be caused by the following figures: —

PER CAPITA CONSUMPTION OF SUGAR IN KILOGRAMS

	ANNUAL AVERAGE 1870–1874	ANNUAL AVERAGE 1885–1889
Great Britain and Ireland .	22.6	32.6
United States	17.6	24.5
France	7.8	10.7
Germany	6.7	7.8
Italy	2.9	3.1

In recent years (1889–1899) the English consumption has risen to 43 kilograms, the American to 32, the French to 15, and the German to 13.7. Of course, even if there

had been no sugar taxes and export bounties in France and Germany, the English, with their higher standard of comfort, would probably have consumed more sugar than the French or Germans; but, as things have been, the difference in favor of England has been enormously accentuated.

The increased consumption of meat and sugar in most of the countries included in our investigations leads one to the conclusion that there has been a material improvement in the diet of large numbers of people, even though all classes may not have participated equally in the greater diffusion of comfort.[1] The same inference can be drawn from the fact that, in some countries, at least, the consumption of tea and coffee has advanced with considerable rapidity. In the United States this change has been very marked. Our consumption of tea *per capita* increased from about one half pound in 1830 to something over one pound in the year 1900, while the coffee consumed by our people rose from less than three pounds to nearly ten pounds during the same period. The greatest differences appear in the relative amounts of these two articles consumed by various countries. Australia, Great Britain, and Canada use very large quantities of tea, and consume comparatively little coffee. At the opposite end of the scale, Germany, France, and Belgium use a large amount of coffee and very little tea; while the United States and Holland consume a moderate quantity of tea and a large amount of coffee. It would be possible to show similar peculiarities in the

Conclusions.

[1] If it were possible to obtain statistics showing the increased consumption of fruits and vegetables, this conclusion would be strikingly reënforced.

consumption of liquors and tobacco; but limitations of space compel us to proceed to another division of our subject, — the production of wealth.

FOR SUPPLEMENTARY STUDY

General: HADLEY, Economics, 1–25; MARSHALL, Economics, 118–131, 158–198; SEAGER, Introduction to Economics, 63–80.

Special: MAYO-SMITH, Statistics and Economics, 16–54; Seventh Annual Report of the United States Commissioner of Labor.

CHAPTER III

THE PRODUCTION OF WEALTH

I. A General Survey

§ 17. Since man does not create matter, the production of wealth does not mean the creation of something that was previously non-existent. The most that human powers are able to do is to create utilities; and production means, therefore, changing the forms or relations of matter so that it becomes better fitted to satisfy human wants. Wood or iron can be converted into houses or machines; seeds can be placed in the ground where natural forces act upon them and stimulate the growth of plant life; Dakota wheat can be transported to Liverpool, acquiring increased utility by the change of place. In these, and all other cases, *production means the creation of utilities.*

Production defined.

§ 18. In the development of the arts of production five historical stages can be distinguished. In the most primitive stage wealth is obtained by hunting and fishing, with the aid of the simplest weapons and implements. The second is the stage of pastoral industry, in which men domesticate various animals, and depend chiefly upon their herds for food and clothing. A third stage is reached when men learn to raise plants as well as to rear animals. Pastoral peoples are, of necessity, nomads, since they are compelled to

The early economic stages.

move about from place to place in search for the best pastures for their flocks; but when agriculture becomes the principal industry, men settle permanently upon the land which they have improved, and nomadic existence comes to an end.

The handicrafts stage.

The fourth stage is marked by the development of manufactures and commerce. Handicrafts, which previously have been merely subsidiary to agriculture, are now greatly improved, and occupy a larger number of workers. Division of labor gradually arises and much more capital is employed, although production is carried on mostly by hand, aided only by the motive power furnished by animals, wind, and water. The products of the hand trades find an ever widening market, and commerce is prosecuted on a much larger scale than in the pastoral or agricultural stages. Money comes into more general use, as the indispensable tool of trade; and large cities now arise as centers of manufacturing or commercial industry. In antiquity the most flourishing states of Greece and Italy reached this stage of development, and in the seventeenth and eighteenth centuries of the Christian era the leading countries of Europe had attained a similar position.

The industrial stage.

Finally, since 1760, the most advanced countries of the western world have reached the industrial stage of development. England led the way for the other nations, and in the course of sixty years her industries were so greatly transformed that the changes which occurred have been called the Industrial Revolution. The invention of improved appliances for spinning yarn and weaving cloth literally revolutionized first the

cotton and later the other textile industries. The improvement of the steam engine, through the labors of James Watt and others, supplied a practical method of pumping water out of mines and hoisting coal from the shafts; and thus the production of coal was greatly increased. With the abundance of fuel provided, the iron industry was stimulated into new life, and soon the invention of the blast furnace and other appliances completely transformed conditions there. English manufactures began to advance by leaps and bounds, and by 1815 England had established that industrial supremacy which is only now beginning to pass from her hands. After 1790, when the new cotton machinery was successfully installed in the United States, the new appliances were gradually introduced into other lands, and by 1850 the change from hand to power manufacture was substantially complete in most of the great staple industries. Meanwhile the steam engine had been revolutionizing methods of transportation on land and water, and the electric telegraph was coming into use. Commerce had been enormously increased by the cheapening of products and the improved means of communication; banking facilities had been widely extended; small stores and factories had been replaced or supplemented by larger industrial enterprises, and the business man of the middle of the nineteenth century had been placed in a new economic world which differed from that in which his grandfather had worked far more than his grandfather's world differed from that of the best days of the Roman Empire. It is to the study of the industrial stage, in which we now live, that the greater part of this book will be devoted.

II. The Factors of Production

§ 19. The production of wealth requires the coöperation of three factors, — nature, man, and capital. Of these, nature and man are, from the economist's point of view, the original factors with which the science starts; while capital is a secondary or derived factor, resulting from the action of the other two, but a necessary auxiliary if production is to be at all copious. It will now be desirable to study each of these factors in some detail.

The three factors.

§ 20. Nature assists man in production by furnishing him with various materials upon which he may exert his labor, and with physical and chemical forces which may be applied to useful ends. The windmill, water wheel, steam engine, and electric motor are some of the most conspicuous devices for utilizing natural forces in production; but the coöperation of nature is secured, also, in the ordinary operations of agriculture and stockraising.

(1) Nature.

§ 21. The United States has been, upon the whole, exceptionally favored in the natural conditions in which its economic life has developed. Its vast area — 2,970,000 square miles, exclusive of Alaska and outlying possessions — not only furnishes subsistence for a large population, but supplies widely differing conditions of soil and climate that enable the country to raise a large variety of agricultural products.[1] American farms now include 414,793,000 acres

Natural conditions affecting American industry.

[1] The arid regions, which extend from about the one hundredth meridian to within two hundred miles of the Pacific coast, are the only unfavorable section of the United States. Their extent is large — from one third to

of improved land,[1] and as much more that is unimproved. From them are produced enormous crops of cereals [2] and more than eighty per cent of the world's supply of cotton,[3] besides an abundance of fruit and vegetables, as well as hay, tobacco, cattle, and dairy products. "Both food supplies," the census tells us, "and agricultural materials for manufacture are cheaper, more abundant, and more varied in the United States than in any other manufacturing country." Tea, coffee, sugar, and wool are almost the only important vegetable or animal products for which we are obliged to depend wholly or largely upon external sources of supply.

Mineral resources.

In respect of mineral resources the country is equally fortunate, producing in abundance almost everything required by manufacturing industries. Soft coal, upon which modern manufactures depend, is found in many states, and is readily transported to all

two fifths of the whole area of the country; but a portion can, by means of irrigation, be made available for agricultural purposes, a part can be used for pasture, a part for forests; while, of course, the Rocky Mountains are very rich in mineral treasures.

[1] The improved farm lands equal 648,000 square miles, or the entire area of France, Germany, Austria, and Italy.

[2] In 1903 the quantity of cereals produced and exported was as follows: —

	Produced	Exported
Corn	2,523,600,000 bu.	76,600,000 bu.
Wheat	670,100,000 bu.	202,900,000 bu.
Oats	784,100,000 bu.	4,600,000+ bu.
Rye	29,400,000 bu.	5,400,000+ bu.
Barley	131,900,000 bu.	8,400,000+ bu.

[3] In 1899–1900 the world's supply of cotton was 10,612,000 bales of 500 pounds each. Of this the United States produced 9,137,000 bales.

industrial centers;[1] while a large supply of anthracite is procured from Pennsylvania. Iron ore is produced in enormous quantities, our output far exceeding that of any other country.[2] For industrial purposes, iron is the most precious of the metals, so that, in possessing the world's largest available supplies of coal and iron, the position of the United States is unique. Since the development of electrical industries in recent years, copper has taken rank among the most important metals; and in respect of this product our country is more fortunate than all others, producing in 1899 some 282,000 tons out of a total world supply of 463,000 tons. Nor is there a lack of the less important minerals, with the single exception of tin. Finally we should note that ever since the Californian discoveries in 1849, the United States has been one of the great gold-producing countries of the world; while since 1870 the opening of silver mines in Nevada and elsewhere has given it a prominent position as a producer of the white metal. Only Australia and South Africa now rival this country in the production of

[1] In 1899 the world's coal production was as follows: —

United States	230,254,000 tons.
Great Britain	223,690,000 tons.
Germany	135,824,000 tons.
Other countries	130,452,000 tons.
Total	720,220,000 tons.

[2] In 1899 the world's production of iron ore was: —

United States	25,086,000 tons.
Germany	17,989,000 tons.
Great Britain	14,697,000 tons.
Spain	9,397,000 tons.
Other countries	11,834,000 tons.
Total	79,003,000 tons.

gold; and Mexico, in the mining of silver; while in the output of the two metals, the United States stands pre-eminent.[1] So far, then, as the mineral resources of the world are now known, it would appear that nature has dealt with no other land so bountifully as with our own.

Besides the many excellent harbors which facilitate commercial intercourse with foreign lands and between the seacoast states, the United States possesses important inland waterways. The Hudson, the Delaware, and the James rivers have long been highways of commerce; but far more significant is the part which the Mississippi and its tributaries have played in the development of the central states. These rivers furnish many thousand miles of navigable waters, so that the introduction of the steamboat after 1815 brought almost all parts of the Mississippi Valley into communication with each other. Most important of all to-day are the Great Lakes which, with the canals that connect them at various points, now furnish an unbroken highway one thousand miles long, and carry a freight traffic equal to two fifths of all the tonnage transported by the railways of the country. With excellent harbors, with 18,000 miles of navigable rivers, and with the largest lake system in the world, our industries have not lacked natural aids to the cheap assembling of raw materials and the ready shipment of completed products.

Waterways.

§ 22. Through his own labor, man becomes the second factor in production; without it he "would necessarily

[1] In 1902 the world's gold output was 14,313,000 fine ounces, of which the United States produced 3,870,000; while the silver output was 166,955,000 ounces, of which this country supplied 55,500,000.

perish from the face of the earth even if all soils were fertile and all climates temperate." Labor, therefore, is an imperious necessity, but furthermore is, and always has been, a needful discipline and the means through which men have learned most of the virtues that have enabled them to advance from barbarism to civilization. Although sometimes distinctly pleasureable, as the work of the scholar or the artist, and to some extent attractive in most of its forms, labor involves both bodily fatigue and the sacrifice of leisure that could be used for other purposes. For this reason it is probably true that most men need to be spurred on to their daily toil by the knowledge that, if they will not work, they shall not eat.

(a) Man.

However great its educational influence may be, labor is not an end in itself; rather must it be considered a means to the end of a plentiful production of commodities. Therefore we cannot approve of attempts to make work for men to do by resisting the introduction of labor-saving machinery or by lavish expenditure on the part of the rich.[1] With the resources now at its disposal, society is unable to produce all the things desired by its members. An improved machine or process sets free a certain portion of the labor force which can be employed in satisfying needs that formerly went unsupplied; while lavish expenditure

Labor not an end in itself.

[1] A wealthy Frenchman, it is said, used to break his wine glass after finishing his repast, with the remark, "The world must live." Any one who approves of such methods of benefiting the poor might ask himself how much good would be done if the rich would only make a practice of breaking tableware and destroying the rest of their household belongings.

exhausts productive power that might have ministered to some reasonable want. Even if the production of wealth should ever be so great as to satisfy all rational needs, it would still be desirable to employ improved methods and appliances, since these things would insure greater leisure to cultivate higher faculties or to enjoy the wealth produced.

§ 23. In the individual laborer efficiency depends upon a variety of factors which deserve a moment's attention. Original endowments of strength and vigor vary greatly from one group of laborers to another, men of some races surpassing others by fifty or one hundred per cent in mere muscular strength and physical endurance. Acquired skill and knowledge are other important factors, since in apparent capacity for improvement workmen differ as widely as in their original bodily endowments. Not every common laborer is able to develop the dexterity and the power of sustained, intelligent action required of a skilled mechanic in charge of an expensive and delicate machine. A third condition upon which efficiency depends is the enjoyment of good food and comfortable shelter; underfed laborers lack bodily vigor, and crowded, unsanitary tenements enfeeble the workmen and cause disease. Then the mental and moral qualifications of the laborer constitute a fourth factor, since intelligent and conscientious workmen require less superintendence, can be intrusted with work for which others are unsuited, and prove most effective and least wasteful. Finally the social esteem in which labor is held and the legal and political position of the laborer are factors of the utmost importance. When labor is

Efficiency of labor.

considered honorable, and wide opportunities are open to the man who renders the most effective service, laborers will display energy and ambition that will vastly increase the value of their work. In this particular the contrast between the United States and other countries is most marked; even recent immigrants, who can expect little change in their own position, show themselves eager to toil to the utmost in order that their children may enjoy opportunities, denied to themselves.

Efficiency remaining constant, the labor power of a country with a given population will depend upon the proportion of the people who are engaged in useful pursuits. The statistics usually presented in discussions of this subject give the number "engaged in gainful occupations," to use the words of our federal census. As shown in our opening chapter, slightly less than two fifths of our total population is so employed; and, upon this basis, our labor force consists of 29,285,000 persons. But these data necessarily omit the multitude of women, and even children, engaged in useful labor within their homes; and, therefore, do not give an adequate idea of the true labor force of the country. For many purposes the figures may suffice, but they do not represent our entire labor force, as the term is here used.

The proportion of laborers in useful pursuits.

Finally, if efficiency and the proportion of useful workers remain the same, the labor force of a country will vary directly with the number of its inhabitants. The growth of population is determined by two factors — the natural rate of increase and the gain of numbers through immigration.

Population.

§ 24. The natural increase of population depends upon the proportion which births bear to deaths. In a community of 10,000 persons, 300 births or deaths a year will give a birth or death rate of 30 per thousand. If both the birth and the death rates remain at 30, population will be stationary; if, however, the normal birth rate is 35 and the death rate 25, the annual increase will be 10 per thousand, or one per cent. From 1871 to 1890 the average birth rates of the principal countries of Europe varied from 44 in Hungary to 24.6 in France; while death rates ranged from 33.7 for Hungary to 16.9 for Norway. Generally, the higher birth rates were accompanied by high death rates, so that they did not imply, necessarily, an extremely rapid increase of population. Thus Hungary had a birth rate of 44, and Norway a rate of 30.7; but the Hungarian death rate was 33.7, while the Norwegian was only 16.9; so that the latter country showed a net increase of 13.8, and the former an increase of only 10.3. In most of the countries of Europe population has, for a century or more, shown a steady increase; but France, with a birth rate of 24.6 and a death rate of 22.8, has remained almost stationary in recent years. For the United States the somewhat conjectural estimates of the census indicate a birth rate of 35.1 and a death rate of 17.4, a net increase of 17.7.

The growth of population.

In the causes that influence the movement of population we come to a topic that has played an important part in economic discussion ever since 1798, when Thomas Robert Malthus, an English clergyman, published his celebrated "Essay on the Prin-

The theory of Malthus.

ciple of Population." In the form which his theory assumed in the later editions of this book, Malthus taught that, if unrestrained by anything except the mere physiological limits, population would increase in a geometrical ratio, doubling in periods of about twenty-five years. He contended, furthermore, that, at the best, the food supply can only be increased in an arithmetical ratio; so that, if the natural rate of the increase of population be represented by the series 2, 4, 8, 16, 32, etc., the growth of the food supply would be not greater than is represented by the series 2, 3, 4, 5, 6. From these facts he argued that population tends continually to outstrip the available means of subsistence, and is kept down to the necessary limits by a series of restraints, such as war, famine, pestilence, ordinary diseases, vice, misery, and prudential checks. The conclusion which Malthus finally reached was that the prudential restraints, by which he meant the moral considerations that should lead a man to refrain from marrying before he is able to support a family, should be encouraged, in order that famine, vice, and disease need not be called into operation.

Into the criticism or defense of Malthusianism we have not the time to enter, but the following considera-

Our conclusions.

tions concerning the movement of population must claim our attention. Without doubt the physiological possibilities of the growth of numbers are very great, since, as has happened in the United States, population has, by natural increase, repeatedly doubled in periods of twenty-five years. On the other hand, numbers must be restricted to the limits imposed by the necessity of procuring subsistence; and,

if population is imprudently multiplied beyond this point, then famine or disease must reduce numbers, as happens continually among uncivilized races. Among civilized peoples, however, a proper regard for the future may lead men to postpone marriage until its responsibilities can be undertaken prudently; and this moral restraint may, as Malthus urged it should, adjust numbers to the resources of the community.

The economic force which gives strength to this moral restraint is the desire to maintain one's standard of living. Each class of people in any society is accustomed to enjoy a greater or less quantity of the comforts and luxuries of life. This quantity forms the standard of living for any particular class, and prudent people will not marry until they have the prospect of incomes sufficient to support themselves and their children in the degree of comfort that they have been accustomed to enjoy. The standard is not an absolutely fixed quantity; but, on the contrary, can be raised or lowered. Educational influences that arouse new wants tend to elevate the standard; while a series of discouragements and misfortunes may lead a family to accept a lower one. In proportion as people are prudent enough to insist upon maintaining their accustomed scale of living, the population will be adjusted readily enough to the limits imposed by subsistence. Upon the other hand any classes of persons who disregard the plain dictates of prudence may expect to encounter some of the harsher restraints upon population, and have only themselves to blame for the suffering which their recklessness occasions.

The standard of living.

§ 25. Immigration, the second influence affecting the

growth of population, has been a factor of the greatest importance in the United States. Migrations of men take place in all countries; but in Europe, since the great discoveries of the fifteenth and sixteenth centuries, emigrants to the newly discovered lands have usually exceeded the immigrants from all sources whatever. Immigration into the United States was comparatively small from 1790 to 1820; but then it began to increase, and by 1840 had assumed large proportions, which it has maintained ever since. In 1850 there were 2,244,602 persons of foreign birth in this country, and they formed 9.7 per cent of the total population; by 1900 the number had grown to 10,460,085, and the percentage of foreign-born inhabitants had risen to 13.7. In addition to this, there were, in the latter year, no less than 15,687,000 native white persons who were of foreign parentage.

Migration.

The common view concerning the economic effects of immigration upon the United States is fairly represented by the following extract from a well-known work of reference: "It has supplied the labor force which was necessary to bring the soil under cultivation. It has enabled us to take up vast stretches of territory. It has built railroads, dug canals, made highways, cut down forests, — in short, turned the wilderness into cultivated land. It is safe to say that without this immigration the growth of the country would have been very much slower, and that we should only now be where we were twenty years ago." But there is reason for thinking that such a view of the matter overlooks certain very important considerations.

Effects of immigration in the United States.

The fact is that, prior to the time when immigration became large, the population of the country increased at a rate that was even more rapid than that shown after the arrival of large numbers of immigrants. This is proved beyond question by the following statistics: —

Some data.

Date of Census	Population	Per Cent of Increase	Number of Inhabitants per Sq. Mile
1790 . .	3,929,214		4.89
1800 . .	5,308,483	35.10	6.61
1810 . .	7,239,881	36.38	3.69
1820 . .	9,633,822	33.07	4.76
1830 . .	12,866,020	33.55	6.35
1840 . .	17,069,453	32.67	8.43
1850 . .	23,191,876	35.87	7.93
1860 . .	31,443,321	35.58	10.84
1870 . .	38,558,371	22.63	13.30
1880 . .	50,155,783	30.08	17.29
1890 . .	62,622,250	24.86	21.20
1900 . .	75,568,686	20.70	25.60

It will be seen that, in the decades ending in 1800 and 1810, the natural increase of the native inhabitants, in the absence of any considerable immigration, caused a growth of population amounting to 35 and 36 per cent; while in the decades ending in 1820 and 1830, when immigration was still small, the rate of increase was 33 per cent. Prior to 1820, therefore, the population, when it was dependent solely upon the natural increase of numbers, grew as rapidly as at any subsequent period. This was due to

The rapid natural increase of population in former times.

exceptional circumstances, chiefly to the fact that the United States was expanding over a vast area of fertile land; so that an increase of numbers meant not so much an increase of mouths to be fed as an addition to the labor that could be employed in cultivating the soil. Under such conditions, which made it possible for each new family to take up a farm, marriage occurred at an early age, families were large, and nothing checked the growth of population except the physiological limitations upon its increase.

The growth of numbers and the gradual disappearance of free land would have changed the situation in time, even if no new factor had intervened. As population became more dense, it would not have been so easy to raise families of six, eight, or ten children; and the rate of natural increase must inevitably have declined. There are indications that this point was just being reached when immigration assumed such large proportions after 1840. In any case the inflow of a vast army of foreign laborers with lower standards of living brought to an end the easy conditions of life which had made possible the unprecedented natural increase of numbers from 1790 to 1830. This it did in two ways. In the first place, precisely as the natural increase of population would have done ultimately, the vast numbers of immigrants hastened the disappearance of free land — at first in the older states, but finally even in the far West. In the next place, having lower standards of living, the immigrants could drive the native-born inhabitants out of the ruder employments by their willingness at first to accept lower wages. As President Hadley

This was checked by immigration.

of Yale University has put it, "The Irishman in 1830 forced the American up; the Italian and the Canadian have forced the Irishman up." Although this process drove the native-born into the higher occupations, it increased very greatly the expense of educating a family of children to the callings followed by their parents, and rapidly checked the natural increase of the native population. In this view of the case, therefore, immigration has not added to our total population so much as it has given us foreign-born in the place of native-born inhabitants. It may be too much to say that our population would have been exactly as large if immigration had never advanced beyond the proportions reached in 1830, but it is very probable that the net result has been to change the composition rather than to raise the aggregate number of our people.

§ 26. We have now come to the third factor of production, capital, which is necessary in all except the most primitive kinds of industry. Indeed, the hands of man, unaided, would hardly be able to do more than gather wild fruits and nuts, or procure a few other things that nature yields to the labor of mere appropriation. Most goods cannot be obtained by the direct application of human labor, and must be secured by an indirect process of approach. If men will first fashion fish nets or hunting weapons, they can then obtain fish or game which otherwise it would be impossible to procure; if they will first devote some labor to the manufacture of a plow and harrow, they can place seeds in the ground under such conditions that a bountiful harvest will be secured; or if they will first construct a water

(3) Capital.

wheel or a steam engine, they may harness water or steam in the production of results that no amount of unaided human effort could possibly attain. In all such cases men adopt an indirect or roundabout method of satisfying their wants; they first produce tools or machines, and then utilize these instruments in the production of wealth.

Indirect methods of production.

Indirect methods of production are far more effective than direct, because they enable man to utilize all the materials and forces which nature supplies. Such materials as the useful metals, for instance, could never have been wrought into a form adapted to human use without various appliances of indirect production. Even a material like wood cannot be utilized to any purpose without the employment of suitable implements. Heat and moisture cannot insure a good crop unless the soil has been prepared by proper tools; and air, water, steam, and electricity are powerless to assist industry unless they are brought into operation by the right sort of machines. Indirect processes, therefore, enable man to secure the fullest coöperation of nature, and vastly increase the production of wealth.

Capital defined.

Capital, then, may be defined as all the intermediate products which man creates for the purpose of employing them in the production of finished commodities, or, more briefly, as *the produced instruments of production.* The various objects included in our definition are sometimes described as *producer's goods*, and are contrasted with products ready for final consumption, which are termed *consumer's goods.* Some difficult or controverted points connected with the definition are for the moment postponed.

§ 27. It will be helpful at this time to enumerate the concrete forms which capital may assume. A convenient classification runs as follows: — **The concrete forms of capital.**

(1) Productive improvements upon land, such as fences or drains.

(2) Buildings, such as barns, factories, or stores, devoted to productive industry.

(3) Means of transportation, such as roads, canals, or railways.

(4) Raw materials, as wool, iron, cotton, or silk, which are consumed in the act of production, but reappear in the product.

(5) Auxiliary materials, as coal, lubricating oils, or bleaching materials, which do not reappear in the product.

(6) Tools and machines.

(7) Domesticated animals used in production. Our domestic animals have been so much improved by breeding that they are distinctly a product of human industry.

(8) Money, weights, and measures are important aids to modern industry, which is based on exchange.

(9) Commercial stocks of finished products. These commodities, while still in the hands of merchants, are strictly to be considered as materials to which place or time utilities are being added.

(10) Books, instruments, and all other appliances used by persons who render personal services. The instruments of the surgeon or the books and scientific apparatus of the student are examples.

In returning now to the difficult questions raised by our definition, something should be said concerning two

things which have been excluded from the concrete forms of capital. Land was omitted because it is not a product of human industry devoted to productive purposes. It is a necessary instrument of production, of course; but it is supplied by nature, not by human effort, and has been treated adequately in our discussion of nature as a factor of production. It must be separated from capital unless we are willing to confuse the parts which man and nature play in productive industry. To this view of the case the objection is sometimes raised that much land has been so improved by human effort that it is no longer a mere gift of nature. But our definition classifies the improvements as capital, and places the land itself in a separate category. Again it is objected that such improvements as fertilizers and drains become in time inextricably merged with the land; but this is a reason for exercising care in applying our definition, and not for refusing to discriminate between two things that are usually so clearly distinguishable as land and capital.

Land is not capital.

From our list of the forms of capital, man's acquired faculties also are excluded, contrary to the usage of some economists. We must admit that acquired skill or technical knowledge is a product of human effort, and that it may be employed in the production of wealth. But all this is satisfactorily accounted for in our discussion of labor as a factor of production, and there is no need of introducing it in our treatment of capital. No practical difficulty arises if one wishes to follow such a course, but it seems more convenient to take account of acquired skill and technical

Acquired faculties not capital.

knowledge when we consider the part that labor plays in production.

One further word should be said concerning commercial stocks of finished products, which were included among the concrete forms of capital. Many economists have counted as capital all food and clothing, the subsistence of laborers, on the ground that these things enable men to produce more goods. In our view of the matter, however, food and clothing are capital only so long as they are a part of the stocks of goods to which middlemen are adding place and time utilities. When they reach the laborer, they become consumer's goods, and the use which he makes of them is considered an act of final, and not productive, consumption. The opposite view converts the laborer into a mere machine, and makes production, instead of consumption, the end of industrial processes.

The case of commercial stocks.

§ 28. We are now ready to consider certain other methods of classifying the various forms of capital. A distinction is usually drawn between *fixed* capital and *circulating* capital. The former consists of such objects as buildings, tools, and machines, which can be used in repeated processes of production; the latter comprises fuel or raw materials, which are consumed in a single process. More important is a second distinction which is made between free and specialized capital. *Free* capital exists in such a condition that it may be applied to any one of a number of industries; while *specialized* capital is invested in such a manner that it assumes a fixed form, and cannot be withdrawn without partial or total loss. Coal, lumber, iron, and

Other methods of classifying.

bricks are relatively free capital, because they might be invested in many different industries; while blast furnaces, steel rails, and carpet looms are so specialized that they can be used for only a single purpose.

§ 29. It remains for us to study the process by which capital is formed and accumulated. Obviously the first step is the collection of materials and fashioning of the implements needed in the process of indirect production; all capital, therefore, is the result of labor expended in creating it. This labor may be expended by the person who accumulates the capital, or by other persons whom he hires to work for him. Thus a farmer produces capital when he builds a fence or digs a drain, and a manufacturer produces it when he hires masons and carpenters to erect a factory building. If the person who desires to build and equip a factory or railroad has not all the funds required for the purpose, he may borrow from private capitalists or from banks the sums needed to complete the undertaking. Bankers make a business of receiving larger or smaller sums of money which depositors do not happen to need for use, and of lending such sums to persons who wish to establish or extend business enterprises. A business corporation secures its capital from the numerous investors who purchase shares of its stock. Usually when capital is supplied by banks or raised by a corporation through the sale of its stock, it is said that money is invested in the new undertaking; but, in reality, the money is merely the means by which the lender or investor transfers to the manager of the enterprise control over the labor power needed for its development. In all cases, from that of

The formation of capital.

the farmer who digs a drain to that of the corporation which issues its securities, the process ultimately involved is setting in motion the labor required in the production of capital.

But this is not the whole of the matter. The labor that constructs a barn or builds a factory might have been used in producing consumption goods which would immediately satisfy some human want. The barn and the factory, upon the other hand, are able, of themselves, to satisfy no want when their construction is completed. They are useful only for the production of goods that will be available at some future time, and it may be years before they can be expected to return to the owner the value represented by his investment. The production of capital, therefore, always involves the sacrifice of the present enjoyments that the command over a certain amount of labor could give, for future satisfactions which the investor expects to derive from his outlay; it always presupposes a preference for future goods rather than for present enjoyments, and it involves a sacrifice of the present to the future.

The present sacrificed to the future.

This fact is the basis for the customary statement that capital is the result of abstinence as well as of production. Socialists are pleased to ridicule such a statement, and to inquire how much abstinence is represented by the last million that a Rothschild adds to his accumulations. "The ascetic millionaires of Europe!" wrote Ferdinand Lassalle. "Like Indian penitents or pillar saints they stand on one leg, each on his column, with straining arms and pendulous body and pallid looks, holding a plate toward the people to collect

Abstinence.

the wages of their *Abstinence.* In their midst, towering up above all his fellows, as head penitent and ascetic, the Baron Rothschild!"

The meaning of abstinence.

But, as here used, the word "abstinence" signifies nothing more than abstaining from present enjoyments in order to secure some future end. It does not imply that a rich man has to live abstemiously in order to accumulate large amounts of capital; it does mean that he refrains from erecting a new palace or purchasing a new yacht or indulging in some present enjoyment, whenever he invests a part of his income in a productive enterprise. The shallowness of Lassalle's witticism becomes apparent, in any case, when we reflect that millionaires do not supply all the capital that is needed to keep industry in motion, and that a considerable part comes from people of the middle class and even from those in still humbler circumstances. For thousands of persons who accumulate capital, saving does mean plain or even abstemious living; still, this is not what our word "abstinence" primarily implies.

Capital maintained by constant investment.

A nation's stock of productive capital can be maintained only by constant investment; raw materials are quickly exhausted, tools and machines wear out in the course of time, factories and railroads demand continual repairs. A considerable part of the gross product of industry needs to be devoted to the replacement of capital that has disappeared during the year; and if this replacement should be neglected even for a twelvemonth, the productivity of labor would be enormously reduced. It is evident, therefore, that capital must be regarded not as a fixed quantum

of wealth; but rather as a fund continually changing and maintained only by the constant accession of new producer's goods.

Since saving requires abstinence, or the sacrifice of the present to the future, it is obvious that the amount of capital that is brought into existence will vary according to the inducements offered to those who give the preference to future goods. Security of invested capital is the first and most important inducement to saving, while insecurity always proves the most effective deterrent. A fair rate of interest on investments is a second stimulus, although it cannot be shown that an exceedingly low rate would stop all accumulation. A third inducement is the desire to provide for one's old age or the comfort and integrity of one's family. Others, doubtless, can be enumerated; but the principal forces that favor the growth of capital are those which have been mentioned.

The inducements to saving.

The nineteenth century witnessed a marked development of savings institutions and other facilities for the investment of capital. Between 1820 and 1903 the number of depositors in the savings banks of the United States rose from 8635 to 7,305,228; and their savings, increasing in similar proportion, aggregated $2,935,000,000 in the latter year. These institutions are particularly important since they accept deposits of small sums which could not otherwise find profitable investment. The growth of trust companies during the last generation has afforded another agency for the safe investment of funds, the deposits of these institutions having increased from $85,025,000 in 1875 to $1,589,000,000

Facilities for saving and investment.

in 1903. Life insurance companies have stimulated greatly the growth of capital, since the annual premiums which they collect from millions of policy holders represent money which in many cases would have been spent and not converted into capital. Of course the companies are obliged to disburse a considerable part of their incomes for death losses and running expenses; but they accumulate large amounts of capital, nevertheless, for the purpose of meeting future liabilities. At the present time the gross assets of the leading life insurance companies of the country must exceed $2,000,000,000.

FOR SUPPLEMENTARY STUDY

General: HADLEY, Economics, 26–63; MARSHALL, Economics, 213–318; NICHOLSON, Political Economy, I, 32–47, 66–103, 175–216.

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CHAPTER IV

THE ORGANIZATION OF PRODUCTIVE INDUSTRY

I. The Organization of the Factors of Production

§ 30. In our introductory chapter it was explained that the production of wealth is a social process, because it involves the constant coöperation of men who are bound together in complex economic relations. The full extent and significance of this coöperation will be better appreciated after a brief survey of the methods by which the three factors of production are organized for industrial purposes.

Production a social process.

§ 31. The division of occupations is one form of associated effort. This occurs in a family when the men attend to the outdoor work and the women to the care of the house. Or, upon a far wider scale, it takes place within a community when persons begin to devote themselves exclusively to a single trade, such as that of the smith, the shoemaker, or the carpenter.

Division of occupations.

§ 32. A still more complex form of coöperative production is seen in what is called technically the division of labor. By this is meant the division of the process of producing a commodity into a number of different parts, by which each laborer is given but one or two simple operations to perform. In this manner,

Division of labor.

for instance, the manufacture of a shoe has been subdivided into 122 operations requiring the services of 113 different laborers. So far, indeed, has the division of labor been carried in a modern factory that every reader is able to supply many illustrations of this minute subdivision of the work of production.

The advantages of the division of labor were recognized by Xenophon, who wrote, about 362 B.C.: "In small cities the man who makes beds may make doors, plows, tables, and perhaps houses; he is glad if, even so, he can find customers enough to provide a living; and it is plainly impossible that a man practising many crafts should be good at them all. But in great cities, because there is a large demand for each article, a single craft is enough for a living, or sometimes, indeed, no more than a single branch of a craft. We find one man making men's boots only; and another, women's only; one man lives by cutting out garments, another by fitting together the pieces. The smaller the work, the greater the skill in the craftsman." Better known, however, is Adam Smith's discussion of this subject, which has become classical. Smith showed that "the division of labor, by reducing every man's business to some one simple operation, . . . necessarily increases very much the dexterity of the workman." Then he pointed out that, since "a man commonly saunters a little in turning his hand from one sort of employment to another," a considerable amount of time is saved when a person confines himself to a single kind of labor. And, finally, he observed that the division of labor reduces production to a series of comparatively simple processes which can easily be

Its advantages.

studied, and the more readily improved by inventions. The list of advantages has been elaborated by subsequent writers, but the root of the matter may be found in Smith's discussion — and, indeed, in that of Xenophon.

We should not, however, overlook the fact that certain disadvantages attend the division of labor. The workman who is confined to a single process often finds his duties exceedingly monotonous; and, unless he cultivates other interests, his faculties become narrowed, while his intelligence declines. Again, men who have devoted their lives to a few routine forms of labor do not easily find other work if a disturbance in industry throws them out of their accustomed employments. Finally, the division of labor has led to the employment of women and children in many kinds of manufacturing industry, since little muscular strength is needed to operate some kinds of machinery. The textile industries in particular offer a large field for the utilization of such labor; and in 1900 our cotton, woolen, and silk mills employed, for every 45 men, no less than 55 women and children. Yet, when all is said, the division of labor has been an indispensable condition for the development of modern industry; and a wise policy will seek to retain its advantages while remedying the incidental evils that may result from it. Opportunities for education and recreation will counteract the monotony occasioned by confinement to a single operation, while the employment of women and children may be restricted in all cases where the health of the workers or the welfare of the family demands such action.

Disadvantages of the division of labor.

§ 33. Underlying the division of labor is another coöp-

erative process, — the exchange of products. Without the opportunity to exchange their wares, the shoemaker, carpenter, smith, and farmer could not devote themselves exclusively to their respective occupations. By means of an organized system of markets merchants provide a vent for the products of all industries, and supply producers with whatever goods they may desire to obtain in exchange for their own commodities. In fact the extent to which labor can be subdivided depends upon the quantity of the particular product which the market can absorb; obviously if there is a demand for only 100 pairs of shoes each year, it will not pay to adopt methods that enable the producers to turn out 1000 pairs. This was perceived by Xenophon when he said: "But in great cities, because there is a large demand for each article, a single craft is enough for a living, or sometimes, indeed, no more than a single branch of a craft." And, in the "Wealth of Nations," Adam Smith enunciated the principle that the division of labor is "limited by the extent of the market."

Exchange.

§ 34. A fourth form of association in industry is found in the coöperation of the three factors of production; for it is necessary that the persons who control the supplies of land, capital, and labor should combine in the establishment of business undertakings. Sometimes it happens that one man may own both land and capital, and do all the work that is required. This is the simplest possible way to secure the coöperation of the three factors, and is a common method in American agriculture, where so many farmers cultivate their own land with their own labor and capital.

Coöperation of the factors of production.

But whenever different classes of persons control the supplies of land, labor, and capital, a more complex form of organization is necessary. The function of securing the coöperation of landlords, laborers, and capitalists has fallen to a distinct class of persons, known as employers or undertakers [1] or *entrepreneurs*. Under modern conditions this position has become exceedingly important; *entrepreneurs* are constantly seeking favorable opportunities for establishing business enterprises, and upon the good judgment which they show in locating and organizing an industry its subsequent success in large measure depends. Very often the *entrepreneur* contributes a part of the capital invested in a new undertaking, and he may even labor with his own hands; but when he does either of these things, he is acting as a capitalist or laborer; his function as *entrepreneur* is wholly distinct from any additional functions he may choose to assume as landlord, capitalist, or laborer.

The entrepreneur.

Entrepreneurs may secure the coöperation of land, labor, and capital by any one of the following methods: —

Forms of business organization.

(1) The single *entrepreneur* system, in which an employer, contributing all of the land and capital, or hiring a part, and collecting the requisite number of laborers, establishes and conducts a business upon his individual responsibility.

[1] Undertaker is the older English word for a person who establishes and conducts a business undertaking. Thus Adam Smith speaks of an undertaker employing "manufacturers." Since the word is now commonly applied to a single line of business, the equivalent French word, *entrepreneur*, has come into use.

(2) Next comes the ordinary business partnership. In this, two or more men unite in supplying the capital and assuming the risk of management. This form of undertaking is advantageous when the business requires more capital than any one partner could supply, or when the cares of management need to be divided. The partners agree to share profits or losses in certain proportions, and are jointly and severally liable to their creditors for all the debts of the firm to the full extent of their fortunes.

(3) A third form of undertaking is the business corporation. This is now of such exceedingly great importance that it will require detailed treatment in the second part of our chapter.

(4) Coöperative production is the next form of undertaking. In this, a number of laborers combine to establish an enterprise and to conduct it upon their own responsibility, dispensing with the services of the *entrepreneur*. The strength and weakness of such enterprises will be considered in a subsequent chapter.

(5) Another sort of undertaking is the management of business by a government. The post office is usually conducted in this way, and water works or gas and electric plants may be managed in this manner. This, again, brings up a subject that will be discussed elsewhere.

II. Business Corporations

§ 35. For our discussion a corporation may be defined as a number of persons who are empowered by law to act

as an individual for certain purposes defined by a charter. Such a body corporate is given the power of providing for a succession of new members upon the death or retirement of the old; and thus is authorized to maintain a continued existence for a period of years, or, more commonly, in perpetuity. A church, a university, or a charitable institution can be most conveniently organized in this way; and until the nineteenth century, such eleemosynary organizations, together with a considerable number of chartered municipalities, formed the vast majority of all the corporations in existence. The nineteenth century, however, witnessed an enormous increase of corporations formed for business purposes; and, at the present day, all large enterprises, as a mere matter of course, assume corporate form. In the United States the census for 1900 showed that nearly sixty per cent of the product of our manufacturing industries came from incorporated companies. When it is remembered that all our railways are owned and operated by corporations, and that mining industries are usually conducted in the same manner, it will be evident that a very large share of the business of the country has passed into corporate control.

Growth of business corporations.

§ 36. The charter of a corporation authorizes the members to act as a single person through such officers or other agents as they shall appoint to represent them. They may acquire or sell property, may conduct manufacturing or commercial enterprises, and may sue and be sued. The powers of a corporation are fixed by its charter; and beyond the limits thus defined, it cannot lawfully proceed. Any action that exceeds the

The powers of a corporation.

powers conferred by the charter would be pronounced by the courts *ultra vires*, *i.e.*, beyond the powers of the corporation; and in extreme cases such action might lead to a forfeiture of the charter. Under the lax laws of some of our states, however, corporations may secure power to do almost anything under the light of the sun; so that in such cases the doctrine of *ultra vires* has little more than academic interest.[1] Until shortly before the middle of the nineteenth century it was necessary to apply to a state legislature for a special charter for every corporate enterprise that was established. Sometimes charters were granted only to members of the party in power, or could be procured only by bribing members of the legislature; so that at last it became desirable to enact general laws under which any body of persons could, by complying with certain reasonable conditions, secure the privilege of incorporation. At the present time some of our states allow corporations to be formed only under general acts of this character, while everywhere the tendency is to restrict the granting of special charters.

§ 37. A business corporation has a capital stock which is divided into shares, usually of $100 each. When a company is formed, the laws of most states allow these shares to be issued to the original subscribers upon any con-

[1] Here are some of the provisions of the charter of a lumber company organized in New Jersey. The company is given power "to acquire and improve timber, farming, grazing, mineral, *and other lands*"; to "manufacture lumber, iron, steel, manganese, coke, copper, *and other materials*"; to construct and operate railways, canals, "*and any other means of transportation*"; and "to engage in any other manufacturing, mining, constructive, or transportation business *of any kind or character whatsoever*."

ditions that the promoters of the enterprise establish; although stricter regulations are imposed by federal laws upon national banks, and by some states upon public-service companies. Thus a capital stock of $1,000,000 may represent the payment of $1,000,000 in cash, or property taken at a fair valuation; or it may represent a payment of $1000 by the original subscribers, in which case $999,000 of the capitalization is usually described as "water." Stock may be common or preferred; the latter being entitled to a certain annual rate of dividend, say six per cent, before anything can be paid to the holders of the common stock.

Common and preferred stock.

Many corporations raise a considerable part of their capital by issuing obligations known as bonds. Legally a corporation bond is a debt of the company that issues it, and calls for the annual payment of a fixed rate of interest as well as for the repayment of the principal at the expiration of a certain term of years. In a majority of cases the payment of both interest and principal is secured by executing a mortgage upon the property of the corporation for the benefit of the bondholders, and securities thus issued are termed mortgage bonds. In such cases the failure to pay either interest or principal gives the bondholders the right to seize and sell the mortgaged property in order to satisfy their claims; but in practice it is not always feasible to carry out a foreclosure sale, so that some sort of compromise is often effected. From the economic point of view the bonded debt of many corporations is not to be considered as a true debt, but rather as a permanent investment of capital

Corporation bonds.

by the bondholders. A railroad costing $2,000,000 to construct, and earning $120,000 net income a year, would be able to pay six per cent dividends upon $2,000,000 of stock. If, now, the promoters issue stock only to the amount of $1,000,000, and raise the rest of the capital by selling $1,000,000 of four per cent bonds, the company will be able to pay the $40,000 annual interest on the bonds and then have $80,000 available for dividends on the stock. By raising one half of their capital by means of a bond issue, the stockholders in this company can receive an eight per cent dividend in place of the six per cent that would have been secured if all the capital had been raised by means of stock. The railroads of the United States in 1902 had outstanding $6,024,000,000 of stock and $6,109,000,000 of bonds and other obligations. While some of this indebtedness will ultimately be paid, the greater part will never be retired; and it must be considered as a permanent part of the capital which the country has invested in its railway system.

§ 38. In almost all of the states the stockholders of a corporation are not liable for the debts of the enterprise.[1]

Limited liability.

In case of insolvency the stockholders may lose, of course, all that they have invested when the property of the corporation is seized in order to satisfy the demands of its creditors; but their liability extends no farther, so that their position is vastly more favorable than that of the members of a business partnership. The

[1] Some exceptions are made. A number of states make stockholders liable for wages due to employees; or when part of the capital has been refunded to stockholders; or for any sums remaining unpaid on the shares owned.

English Parliament and the legislatures of many of the American states were slow to adopt this policy of limiting the liability of stockholders; but, during the last half of the nineteenth century, such a course was practically forced upon them. For under modern conditions vast sums of capital are needed for the prosecution of large enterprises, and the funds could not be obtained without the grant of a limited liability. Many men may be glad to risk small or moderate sums in a new and untried enterprise, when no one would invest a penny if such action obliged him to jeopardize his entire fortune. Moreover, the limitation was defensible upon grounds of equity, because the average stockholder in a large corporation has little influence upon the conduct of its affairs, and frequently knows little about them; in fact the person who extends credit to a company is usually in a better position to judge of its solvency. Such considerations do not apply to a small corporation in which a few persons, perhaps members of one family, own all of the stock; but in raising the capital needed for building railroads, equipping giant factories, and operating huge steamships, limitation of the stockholders' liability is both just and expedient.

Advantages of corporate organization.

§ 39. Besides making it possible to raise the large capitals demanded by the conditions of modern industry, the business corporation has the advantage of rendering the life of an enterprise independent of such contingencies as the death of any or all of its members. With a partnership, the affairs of the firm have to be readjusted every time that one of the partners dies; and there are comparatively few such enter-

prises that survive the death of the last of the original members. The existence of an incorporated company, however, is in no way involved in the death of a stockholder even though its prosperity may be affected by the loss of one who had been its ablest leader. Since such a concern as a railroad ought always to be managed with an eye to the distant future, it is highly desirable to have it controlled by a company that can count upon a perpetual existence.

The stock exchanges.

It has proved advantageous to have the ownership of our largest industrial enterprises divided up into the thousands of small shares represented by the stocks. Not only does this arrangement afford good opportunities for small investments, if the companies are honestly conducted, but it makes it possible to determine at any moment the value of a man's holdings, whether large or small. For the securities of the leading corporations are bought and sold in the public stock exchanges by a large number of professional dealers who make it their business to study these securities and to ascertain their value. By looking at the quotations which the morning paper brings him in its stock market columns, an investor can tell at a glance the money value of his holdings, and can either increase or dispose of his shares by merely telephoning to his broker. Speculation in the stock market has its undesirable features, of course, and is responsible for a great many evils which are too well known to require discussion; but the utility of the stock market in facilitating the valuation and transfer of corporation securities is so great that business could not be conducted without it.

§ 40. Some knowledge of the elements of corporation accounting is absolutely indispensable for the student of modern industry, and the subject can be best approached by a study of what are known as the income account and the balance sheet. The income account presents a statement of the earnings and expenditures of a company for a certain period, such as a quarter, or a year; and is sufficiently illustrated by the following statement of a railroad which, in 1903, operated some 400 miles of line: —

Corporation accounting.

Earnings		Expenses	
Passenger . .	$771,905	Maintenance of track and structures .	$264,091
Freight . . .	1,229,761	Maintenance of cars and locomotives .	177,368
Mail and express .	100,798	Operating trains .	850,543
Miscellaneous .	191,842	Taxes . . .	67,548
		Miscellaneous .	79,290
	$2,294,306		$1,438,840

Summary: Net earnings, $855,466. Paid for rent of leased lines, $19,000; for interest on bonded debt, $540,052; on sinking fund, $33,000; for dividends, $261,728. Total payments from net earnings, $853,780; surplus for year, carried to profit and loss, $1686.

A balance sheet is intended to give a complete statement of the resources and liabilities of a company on a given date, as upon December 31 of any year. If honestly and accurately computed, it enables stockholders, investors, and creditors to judge of the solvency of the company. For the railroad to which we have already referred, the balance sheet for 1903 disclosed the following facts: —

The balance sheet.

LIABILITIES		RESOURCES	
Common and preferred stock	$9,257,000	Cost of road and equipment	$18,679,549
Funded debt	11,162,000	Investments (stocks of other roads)	1,285,792
Accounts and bills payable	732,218	Accounts and bills receivable	438,545
Profit and loss	756,102	Materials and supplies	283,540
		Improvement fund	809,424
		Cash	410,470
	$21,907,320		$21,907,320

Examination of the liabilities.

A number of these items require some explanation. It will be noted that the capital stock of the road is placed among its liabilities. This is done in order to account for the money which the stockholders have invested in the property; against this stock and the bonded debt, the company has a railroad costing $18,679,549 and some other things, all of which appear among the resources. The third item in the liabilities requires little comment; it represents wages due to laborers, accounts due to dealers in supplies, and small loans secured from banks. The item "profit and loss" represents surpluses from the earnings of previous years which have been invested in the property instead of being paid out to stockholders in the form of dividends.[1] Such surpluses represent an additional investment by the stockholders, and need to be charged up against the enterprise, like the capital stock. All together the balance sheet shows that $20,419,000 raised by issuing stock and bonds,

[1] If the net result of the operations of the road up to date had been a deficit, the item "profit and loss" would appear among the assets, in order to balance the accounts.

$756,102 saved out of the profits of previous years,[1] and credits for $732,218 now due to various persons, have been invested in the property owned by the company.

Against these liabilities what has the railroad to show? In the first place $18,679,549 has been expended in constructing and equipping the road; while $1,285,000 has been invested in the stocks of other companies which it was desirable to control in order to secure the traffic which they could supply at various junction points.[2] Then the company has on hand $283,540 of coal and other supplies and $410,470 of cash, which account for a corresponding amount of the liabilities. Moreover, $438,545 of debts are due to the company from connecting lines and other concerns; while $809,424 of money, raised by a recent issue of bonds, is on deposit in a bank, awaiting the time not far distant when it will be needed to pay for improvements that are now under way. The sum of these resources, of course, exactly equals the liabilities; and this side of the balance sheet shows precisely what the company has done with the capital invested in it.

Examination of the resources.

§ 41. While the growth of corporations has been, upon the whole, eminently beneficial in its influence upon modern industry, we should not overlook the dark side of our picture. In nearly all countries, but most of all in the United States, lax laws and a low standard of business morality have enabled serious evils to creep

Speculative promotion.

[1] It will be remembered that the income account for 1903 showed that $1686 had been carried to profit and loss.

[2] From these stocks, dividends of some $60,000 were secured, which, in the income account, are included in the miscellaneous earnings.

into corporation management. Of these the most obvious has been the promotion of companies for purely speculative purposes. In times of great prosperity corporation promoters[1] have too frequently duped the public into buying the shares of worthless companies, and have made large fortunes by floating numbers of enterprises that could have no reasonable prospect of success. This sort of thing began early in the seventeenth century with the Mississippi Company in France and the South Sea Company in England; and it has continued ever since, the closing years of the nineteenth century and opening years of the twentieth witnessing the most unprecedented outbreak of speculative promoting in the history of the United States. This evil will not be entirely removed so long as the laws of New Jersey and some other states make it so easy to float corporations with a maximum capitalization and a minimum of substantial assets[2]; but much can be done by the investing public if it will only learn to discriminate between bubble companies and legitimate business enterprises. Much may be accomplished also by such an administration of our present laws against obtaining money upon false representations as will make it unsafe for a promoter to withhold material facts or publish false statements concerning the assets and earning power of a projected company.

A second class of evils is connected with the management of companies that are carrying on legitimate and

[1] Promoter is the word commonly applied to the man who conceives the plan and carries through the work of floating a company.

[2] In one well-authenticated case a company owning property worth less than $500,000 was floated with a capitalization of $8,000,000.

profitable enterprises. A corporation is controlled by a board of directors elected at an annual meeting of the stockholders and intended to represent the wishes of a majority of the men who own the property. As a matter of fact, when stock is owned by thousands of small holders who can adopt concerted action only with great difficulty, it has been comparatively easy for a few large capitalists to control the annual meetings.[1] Once in control, a board of directors has too often proceeded to manage the property for its own personal interest, and not for the benefit of all the stockholders. Directors of railroads have formed construction companies to build lines that have then been sold to their roads for four or five times the actual cost of constructing them. In this way many railroads have been deliberately wrecked by the burden of bonded indebtedness contracted in the purchase of worthless branches or of valuable lines bought at exorbitant prices. Many of these evils have been corrected, and railroad management is to-day on a distinctly higher plane than it was ten or twenty years ago; but our standards of business morality do not yet lead us to drive out of positions of trust men who have once abused their power as directors for ulterior personal ends.

Irresponsible management.

Then, also, corporations afford too great facilities for the separation of ownership and management. In the first place holders of bonds are creditors, not members;

[1] Shares are often bought with borrowed money just before the annual meeting, and sold immediately afterward. This is done, of course, in order to secure temporary control of the votes which the shares represent. Then, too, the directors are often divided into classes so that only one third will go out of office each year. This makes it more difficult for a majority of stockholders to oust a dishonest board of managers.

and therefore have no voice in the management of the company. A railroad with $1,000,000 of common stock and $1,000,000 of bonds is, so long as it remains solvent, absolutely in the control of the persons who supply only one half of the capital invested.[1] Moreover, one half of these stockholders can control the whole body; so that ownership of $500,000 secures absolute power over $2,000,000 of capital. In recent years the art of obtaining control with a minimum of outlay has been perfected by the use of a device known as the holding company, which is formed to acquire the securities of other corporations. In the case just described, ownership of $500,000 of capital carries control of a $2,000,000 property; but by means of a holding company control can be secured still more cheaply. Manifestly, if a holding company with $500,000 of capital purchases half the stock of the first corporation, it will become the arbiter of its fortunes; and if, then, a few men acquire $250,000 of the stock of the holding company, they will be the masters of both concerns. In this way and in others, ambitious or designing men are able to wield a power that is wholly disproportionate to their investments in the corporations controlled. Such conditions are extremely unfortunate, since directors who neither own the property which they manage nor owe obedience to the men who are the real owners, wield an irresponsible power that encourages recklessness and affords abundant opportunities for dishonesty. In the future reform of our corporation laws, care should

Separation of ownership and management.

[1] Some railroads have been built entirely out of the proceeds of bond issues, the common stock being wholly water. Here the roads are controlled by men who have invested practically nothing.

be taken to check this tendency toward the separation of ownership and management; and the device known as the holding company should be placed beyond the pale of the law.

FOR SUPPLEMENTARY STUDY

General: MARSHALL, Economics, 319–356, 371–392; NICHOLSON, Political Economy, I, 104–121, 131–137.

Division of Labor: Thirteenth Annual Report of the United States Commissioner of Labor, "Hand and Machine Labor."

Business Corporations: GREEN, Corporation Finance; JOHNSON, American Railway Transportation, 69–77.

Organization of American Industries: Twelfth Census of the United States, Reports on Agriculture and on Manufactures. The following references are suggested as topics for special reports or essays: *Agricultural progress of fifty years* (Rep't. Agric., I, pp. xvi–xxxvi); *Localization of the principal crops* (Rep't. Agric., II, plates 1–19); *Present condition of American manufactures* (Rep't. Mfgrs., I, pp. xlvii–lix); *The leading manufacturing industries* (Rep't. Mfgrs., I, pp. cxliii–cliv); *Power employed in manufactures* (Rep't. Mfgrs., I, pp. cccxv–cccxxxv); *Localization of industries* (Rep't. Mfgrs., I, pp. cxc–ccxiv); *Studies of particular industries or of industries of one's own state* (Rep't. Mfgrs.: for textiles, III, pp. 3–16; for clothing, III, pp. 296–301; for cotton ginning, III, pp. 336–340; for flour, III, pp. 369–371; for slaughtering and meat packing, III, pp. 412–421; for dairy industry, III, pp. 437–444; for leather, III, pp. 730–738; for iron and steel, IV, pp. 3–27; for agricultural implements, IV, pp. 358–364).

CHAPTER V

THE LAWS OF PRODUCTION: THE VARIATION OF PRODUCTIVE FORCES

I. The Law of Diminishing Returns

§ 42. In studying the consumption of wealth we saw that the most important principle governing that process was the law of the variation of utility; it is now time to consider an analogous principle that governs the production of wealth, — the variation of the efficiency of productive forces. It will appear that land, labor, and capital, when combined in the process of production, yield varying results according to the conditions under which they are applied; and that the laws governing this variation are some of the most important theorems of our science. We shall discover, furthermore, that there are three sets of conditions with which the efficiency of production varies; and that, corresponding to them, there are three laws which govern the variation.

Variation of efficiency of production.

§ 43. The proportions in which land, labor, and capital are combined are the first condition that affects the efficiency of productive forces; and the variations that result from changing the proportions of these three factors are governed by the law of diminishing returns. Upon a farm comprising twenty

Law of diminishing returns: (a) From land.

acres of land the annual product will vary according to the amount of labor and capital employed in cultivating it. Obviously a small expenditure upon a twenty-acre tract will yield a meager crop, a larger outlay will give better results, and so on until a point is reached at which it is absolutely impossible to increase the plant life that can find light, room, and nourishment upon the farm. But no cultivator ever invests labor and capital upon any tract of land until it is absolutely impossible to increase the size of his crop. Even if he has an abundance of labor and capital to employ, he will find that, when a certain point is reached, it will be more profitable to begin to cultivate another tract of land. This is because, after this point is passed, each dollar expended begins to yield a smaller return than if it had been invested elsewhere. This may be illustrated by the following table which applies to an assumed case.

Amount of Land Cultivated	Amount of Labor and Capital used in Cultivating Crop	Bushels of Corn Produced	Average Yield to Each Dollar of Labor and Capital Invested
20 acres . . .	$100	200	2.0 bushels
20 acres . . .	$200	500	2.5 bushels
20 acres . . .	$300	900	3.0 bushels
20 acres . . .	$400	1040	2.6 bushels
20 acres . . .	$500	1100	2.2 bushels

According to the conditions here assumed $100, or even $200, is too small an investment to secure the best results from this twenty-acre tract; and the efficiency of the productive process steadily increases as the investment rises

to $300, when an average return of three bushels of corn is secured for each dollar employed in hiring labor and capital. Beyond this point, however, the average yield begins to decrease, so that the additional labor and capital would be employed more efficiently if it were invested upon other land equally good, provided such land is obtainable.[1] Upon these conditions, which are recognized by every intelligent farmer, economists base the law of diminishing returns, which may be stated as follows: *An increase of the capital and labor applied in the cultivation of any tract of land will, after a certain point is reached, yield an increased aggregate but a smaller proportionate return.* If this law were not true, agricultural produce would be raised upon a comparatively small amount of the most fertile soil, and men would never have taken the trouble to bring inferior lands into cultivation.

Explanation and statement of the law.

So far our illustration of the diminishing returns to labor and capital employed upon a given tract of land has been confined to agricultural industry, but the law is equally true elsewhere. In manufactures it does not pay to invest more than a certain quantity of labor and capital upon a single acre of land, since a point is finally reached at which it is better to extend a factory over additional ground than to carry it farther up into the air. Although the practice

The law holds for all industries.

[1] If the best land obtainable elsewhere yielded 2.6 bushels per dollar of labor and capital invested, it would be immaterial whether the farmer employed $400 in cultivating the first tract, or $300 on the first land, and $100 upon a proper quantity of the second. If the second tract yielded 2.8 bushels per dollar of investment, the farmer would certainly invest the last $100 there.

varies in different industries, modern factory construction is inclined to favor low buildings rather than the four or five story structures that were so common a generation ago. In such a low building the walls do not need to be made so heavy, expense for elevators is saved, machinery can often be arranged more conveniently, and the fire risk is reduced. The law of diminishing returns, therefore, applies to manufactures as well as agriculture.

And the same is true of other industries.[1] Even the erection of office buildings in large cities is limited in this manner, although modern steel construction has given us the familiar skyscraper. The tallest building cannot be raised above a certain point except at a rapidly increasing expense for elevator service, and the provision for larger light and air spaces diminishes the proportion of land available for the building. When such structures are isolated, they pilfer light and air from adjoining landowners; but as any section of a city becomes filled with them, the limitations just mentioned grow more apparent.

Even for office buildings.

It appears, therefore, that sooner or later a point of diminishing returns is reached in all investments of labor and capital made upon any given tract of land. We must recognize, however, that this law begins to operate much sooner in some industries than in others; so that great differences exist in the amount that can be invested before the returns

But various industries show differences.

[1] Mining is most decidedly an industry of diminishing returns. As surface deposits are exhausted, it is necessary to drive shafts deep into the earth at a rapidly increasing expense. Ultimately, of course, a mine may be exhausted; but this is not what is meant by diminishing returns.

begin to diminish. In agriculture a farm of forty acres may permit an investment of $10,000 in fixed capital, and an annual outlay of $1500 in actual cultivation; while the same amount of land might be used for steel works that would represent a total investment of $10,000,000. With office buildings an investment of $3,000,000 per acre is possible in a city of very large size; and it is probable that these figures mark the utmost present limit to the intensive utilization of land. Yet to farm and to office building the same law applies, and the only difference is the extent of the investment that can be made before diminishing returns appear.

§ 44. What is true of land is true, also, of labor and capital. With a given quantity of labor, say the services of one man, the efficiency of production will vary according to the amount of land and capital with which he works. A tract of one quarter of an acre, and an appropriate amount of capital, will probably be insufficient to utilize fully the services of even a single worker; one acre will give better results, ten acres may do still better, and twenty acres will perhaps yield the largest return obtainable from the labor of one man. Beyond this point it will not pay to invest land and capital if the services of only a single worker are available; so that we find here diminishing returns to investments of land and capital with a given supply of labor. Similarly with capital, different amounts of land and labor may be employed. A given supply of buildings, tools, machines, and materials may be combined with little land or labor, and produce a small return; may be employed with an ample supply, and thus utilized

Diminishing returns from (b) labor; and (c) capital.

with the greatest efficiency; or may be spread out over too much land and operated by too many laborers to secure the best results. With a given amount of any one factor of production, increased investments of the other two factors will show an increasing product up to a certain point, and beyond that point, a diminishing return for each unit applied.

§ 45. But while this law holds true of all three of the factors of production, its practical and theoretical consequences are not the same in the case of labor and capital as in that of land. Every man who conducts a farm, a factory, or a store will endeavor to combine the three factors in such manner as to secure the largest returns with the smallest outlay. A certain minimum amount of each is necessary for the establishment of any sort of enterprise, but beyond that point an *entrepreneur* is free to select that factor which is cheapest and invest it in preference to the others. Thus some land, some capital, and some labor must be had in any factory; but if labor is cheap and capital is expensive (*i.e.*, if the rate of interest is high), somewhat more labor will be employed and somewhat less machinery installed. Such an arrangement means that the machinery is manned by enough workmen to give a large product for each dollar of capital invested, even though the labor would have produced more if employed upon more machines.[1] High rates of interest

Significance of the law with respect to labor and capital.

[1] It will be observed that in this case we take a fixed amount of capital and consider the result of employing increasing amounts of labor upon it, just as, with land, we assumed a twenty-acre tract, and considered the result of employing increasing amounts of labor and capital upon it.

and low wages would make this the most profitable method of procedure. Upon the other hand, if wages are high and interest rates low, more machinery will be introduced and somewhat less labor employed. In this case the labor of each workman would be aided by enough machinery to make his product large, even though the machines might have produced more if additional laborers had been employed. To the extent here indicated, labor or capital is constantly being invested beyond the point of diminishing returns in order to secure the most profitable utilization of that factor which happens to be most expensive. Stated in another way, this means that there is a certain margin or zone within which that factor of production which is cheapest will be used in preference to others. Under ordinary circumstances this margin is not large, and it is only within the limits here defined that any employer will utilize labor or capital beyond the point of diminishing returns.

Significance of the law with respect to land.

With land, however, the case is different. An employer can usually secure as much labor and capital as he needs to equip his enterprise without raising materially the price of these two factors of production, because our supplies of capital and labor constantly increase with the growth of wealth and numbers. But the supply of land does not increase as the population and industry of a community grow; so that its price, *i.e.*, the rent that it bears, tends steadily to rise on account of the increased demand for farms, house lots, and sites for factories. Sooner or later it happens that the best tracts of land are utilized as fully as possible without investing labor and capital beyond the point of dimin-

ishing returns, and then producers have no option but to use inferior tracts or to invest upon the old land more labor and capital than can be used to the best advantage. Both of these things are finally done; and, therefore, the utilization of land becomes more and more intensive and expensive. Thus the growth of population forces a community to use its land beyond the point of diminishing returns, while no such pressure exists in the case of labor and capital.

With land, therefore, the law of diminishing returns has a peculiar significance. The earlier economists, who studied the law solely with reference to agricultural industry, were inclined to interpret it as meaning that the human race necessarily secures its food and other raw produce with increasing difficulty, as population advances. This, of course, would be the result of investing upon poorer lands, or upon the better soils beyond the point of diminishing returns, if nothing else entered into the problem. But, as a matter of fact, improved methods of cultivation, agricultural machinery, and the better organization of industry may enable the poorer soils — and the investments made beyond the point of diminishing returns upon the superior soils — to yield as large a product for a given outlay as was secured under the earlier conditions. All depends upon whether the progress of agricultural methods keeps pace with the increased demand upon the land. Broadly speaking, it appears to have done so in the past; and at the present moment the application of modern science to agriculture seems to be opening a new era for that industry. What may happen in the

Conclusion.

remote future is wholly a matter for prophecy, concerning which speculation is unprofitable; for the present, and for any future that we need contemplate, there is no reason for thinking that the operation of the law of diminishing returns will mean that the race will procure its subsistence with an increasing expenditure of labor and capital.

II. The Law of Economy in Organization

§ 46. The second condition that affects the efficiency of productive forces is the total amount of land, labor, and capital that is aggregated in a single business enterprise. Here we have to deal with the comparative advantages and disadvantages of large- and small-scale production. The variation in efficiency that accompanies changes in the size of a business is governed by the law of economy in organization. It will appear, however, that our present knowledge of the facts of modern industry is not sufficient to enable us to formulate this law with as much precision as was possible with the law of diminishing returns.

Variations in the size of a business.

§ 47. In manufacturing industry the new machinery that was introduced at the time of the Industrial Revolution accelerated in a very marked degree the growth of what is known as the factory system. Steam engines and other costly machines could not be used economically in the little workshops where production had previously been carried on, even if each small producer had been able to buy them. Accordingly it became necessary to organize manufacturing industry in factories where expensive machinery and

Growth of the factory system.

large bodies of laborers could be brought together under skillful supervision; and, later, gigantic corporations entered some parts of the field, establishing the mammoth enterprises that are characteristic of our time. During the nineteenth century, therefore, there was a remarkable tendency toward the concentration of manufactures in large enterprises.

Some statistics from the last census will show how greatly the size of manufacturing establishments increased in certain industries in the United States during the last half of the nineteenth century: —

Statistics for American manufactures.

Industries	Average Number of Employees per Establishment		Average Capital per Establishment		Average Product per Establishment	
	1850	1900	1850	1900	1850	1900
Iron and steel . . .	53	333	$46,716	$858,371	$43,650	$1,203,545
Agricultural implements	5	65	2,674	220,571	5,133	141,549
Leather, tanned and finished	4	40	3,406	133,214	6,500	156,231
Silk and silk goods .	26	135	10,124	167,872	27,007	222,063
Paper and wood pulp	15	65	16,390	219,538	22,996	166,876
Cotton goods . . .	84	287	68,100	442,882	56,553	321,517
Woolen goods . .	25	67	18,036	120,180	27,715	114,425

This table requires little comment. So far as the aggregate masses of labor and capital invested in a single establishment are concerned, concentration is most marked in the iron and steel industry. If, however, the comparative changes since 1850 are considered, it appears that the percentage of increase in the size of the average estab-

lishment has been most marked in the manufacture of agricultural implements.

Other industries show this tendency toward large-scale production in different degrees. In transportation the growth of vast railroad systems has been very marked.[1] In wholesale and retail trade the tendency is less uniform, since small shops persist even by the side of the department store. Ten or twenty years ago it was often thought that agriculture was showing a perceptible tendency toward concentration, but experience has demonstrated that such a view was incorrect.[2] This industry, in fact, seems not to have been greatly affected by the forces that elsewhere have led to the aggregation of land, labor, and capital in larger masses.

Other industries.

§ 48. Wherever an industry has become concentrated in larger establishments, the change has come about for the reason that production could be carried on most economically in that manner.

The economies of large-scale production.

[1] In 1902 the total mileage of American railways was 203,132 miles. Of this, 165,321 miles was controlled by nineteen great railway systems, of which the eight largest controlled about two thirds of all the mileage of the country, and handled more than that proportion of the total traffic.

[2] The census of 1900 shows that, since 1880, farms of less than fifty acres have increased at the expense of the larger farms: —

Year	Percentage of American Farms of Specified Areas				
	1–19 Acres	20–49 Acres	50–99 Acres	100–499 Acres	500 Acres and Over
1880	9.8	19.5	25.8	42.3	2.6
1890	9.1	19.8	24.6	44.0	2.5
1900	11.8	21.9	23.8	39.9	2.6

The economies that are often secured by large-scale production may be classified as follows: —

(1) Economy in fixed capital is one important factor. Modern machine production requires a very large outlay for such purposes and it is probable that fixed capital is an increasing element in the cost of producing manufactured goods. Now within certain limits, at least, the cost of fixed capital does not increase as rapidly as the product of a factory can be enlarged. A large building costing less than two small ones may furnish room for the same amount of machinery. Generally, too, the larger factory can be equipped with a smaller expenditure, in proportion to its capacity, for engines and other machinery. In the big establishment no machine is needlessly duplicated, while in two small ones costly appliances may stand idle for half the time because the product is not large enough to keep them fully occupied. Railroads, both steam and electric, water works, and lighting plants furnish striking illustrations of the economies in fixed capital that result from production upon a large scale. In any territory one such company can supply all the service required very much more cheaply than two, because with a single concern it is necessary to lay but one set of tracks or water mains or gas pipes or electric wires; and there may be a saving, as well, in the cost of power. This economy in fixed capital is very great in the industries last mentioned, but it is an important factor also in manufactures and commerce. If the annual expenses for interest and repairs on fixed capital are $300,000 in any establishment, then the cost of this factor will be thirty cents per dollar of product when the output is $1,000,000.

Now, if, by merely utilizing the plant to its maximum capacity, the product can be increased to $1,500,000, the cost of fixed capital will be reduced to twenty cents per unit of output.

(2) Economy may be secured also in the outlay for circulating capital. A large factory may need less fuel than several smaller ones of no greater capacity. A big store does not need to keep on hand at all times twice the stock of goods that each of two smaller stores will require in order to supply promptly any probable demand of their customers.

(3) Another advantage of a large concern is its ability to command the capital necessary for experimentation with new machinery and methods. Invention and experiment are often costly undertakings, and small concerns cannot afford to keep skilled inventors and expert chemists at work to improve the processes by which business is carried on.

(4) Economy in skill often results from large-scale production. Labor can be more efficiently subdivided in a large factory, since all operatives can be allowed to specialize on a single process, while men of exceptional talent can be given the particular kind of work for which they are best fitted.

(5) In many industries only a part of the raw materials can be employed in manufacturing the main product, so that much is wasted unless some way of utilizing it can be discovered. In a large business the amount of such waste becomes so great as to afford a strong incentive to devise methods of utilizing it.[1] In refining petroleum

[1] See the interesting and valuable monograph on "Utilization of Wastes," in Twelfth Census, Rep't. Mfgrs., IV, pp. 723–748.

material that formerly was wasted is now used in the production of lubricating oil, naphtha, paraffine, and a large number of other articles. So, too, in the beef and pork-packing industry, hides, hoofs, horns, blood, hair, and bristles are completely utilized in the manufacture of a great variety of by-products.

(6) Finally great establishments find it convenient and profitable to carry on for themselves many allied or subsidiary processes. Oil refiners make their own barrels, tin cans, pumps, sulphuric acid, and many other supplies; while sugar refiners secure raw sugar from their own plantations in Cuba, occupy their own wharves and warehouses, and make their own barrels and boxes. In the iron and steel industry the principal producers began, a decade or more ago, to acquire mines of iron ore in Michigan or Minnesota, to purchase railways or steamships required for transporting this material to their furnaces, and to purchase lands containing deposits of coal or limestone. Thus there has developed a process which has been called the integration of industry, by which the producers of the more highly finished products have sought to control all the preliminary stages of manufacture, and to secure their raw materials at the lowest possible cost.

§ 49. It must not be inferred from what has preceded that every and all increase in the size of business undertakings necessarily leads to more economical production, so that the process of concentration must continue until in every branch of industry a single company displaces all others. In railway transportation, indeed, and in the distribution of such com-

Opposing forces.

modities as water, gas, and electricity, experience does seem to show that, in any given district, one company can usually supply the entire demand more economically than two. But in agriculture precisely the reverse is true; while in manufactures and commerce it seems certain that not all the advantages are on the side of the mammoth establishment. The considerations that tell in favor of the enterprise of moderate size are as follows: —

(1) In many cases it appears that the maximum efficiency of the mechanical processes is secured when a plant has attained a certain size. In some of the textile industries, a factory of moderate size will insure the greatest economy of fixed capital attainable; and it is probable that in all branches of manufactures a limit is finally reached at, which the further concentration of capital in a single establishment ceases to be profitable. In a sugar refinery from $4,000,000 to $5,000,000 may be invested before this point of maximum economy is reached, and in the production of iron and steel $10,000,000 may be required; but sooner or later it becomes impossible to increase the efficiency of productive forces by enlarging the size of a factory.

(2) To an increasing extent power for manufacturing processes is distributed to a number of establishments from a central power station, with considerable advantages to smaller producers. As electric power comes into more general use, the importance of this consideration will be greatly increased.[1]

[1] In 1890 all our manufacturing industries employed 5,954,000 horsepower, of which only 88,571 horsepower was rented from central power stations. In 1900, out of a total horsepower of 11,300,000, not less than

(3) Not infrequently a number of small establishments may be located in the same region and may coöperate to secure many of the advantages that larger producers enjoy. Small producers have combined to construct pipe lines, by which petroleum is transported from the oil regions to distant refineries; and have coöperated in the establishment of plants for the utilization of waste products.

(4) New processes and improved machinery are often given wide publicity at the present day through trade papers and other agencies. This tends to disseminate information; and, as often as not, the improved appliances can be bought or rented by the small as well as by the large producer.

(5) Another respect in which the balance of advantage may turn in favor of the smaller establishment is found in the necessity for securing skillful supervision.[1] The individual proprietor or the partner in an ordinary firm has the strongest conceivable inducement to industry and carefulness, and the smaller scale of his operations enables him to give his personal attention to the details of the business. In the eighteenth century Adam Smith had argued that corporations could never be managed so efficiently as business partnerships, since the hired man-

321,051 was rented. Thus rented power increased from a little less than 1.5 per cent to nearly 3 per cent of the total power employed. Of the 321,051 horsepower rented, no less than 183,682 horsepower was supplied by electricity.

[1] In agriculture this consideration is especially important. Each five-acre field on a farm may be best adapted for raising a different crop. Only on a farm of moderate size can the varying capacities of the soil be studied, and the greatest economy secured.

agers of corporate enterprises controlled not their own capital, but that of other people. Up to the time at which he wrote, English experience seemed, on the whole, to justify this view; but in the nineteenth century corporations learned to secure able management by offering large salaries and inducing their employees to acquire stock, thus gaining a personal interest in the success of the business. While corporation management, at the best, now seems to be highly efficient, it remains true, nevertheless, that it is not so uniformly good as to deprive Smith's criticism of all weight. It should be observed, moreover, that, even if the management remains equally honest and skillful, the difficulties of the task increase greatly as the scale of operations grows; and many things have to be left to subordinate officers who are not superior to the ordinary run of hired servants. Thus the race is not always to the swift; and the concern of moderate size, managed by its proprietors, may gain certain advantages that are denied to mammoth corporations.

(6) Finally, it usually happens that the growth of any one establishment is limited by the necessity of finding a market for its product. In the local market an establishment has an advantage over distant competitors; but as it seeks to extend its sales, the cost of securing the additional business increases. This difficulty is greatest in industries that produce articles of which the use depends on a varying public taste or changing fashions; but it exists even with staple products, and tends powerfully to check the growth of an enterprise after a certain stage of development has been reached.

§ 50. From all these considerations it is manifest that

it is impossible to formulate a single principle governing the economy of organization. In the distributive industries the rule seems to be that any increase in the size of a business unit increases the efficiency of the productive process, at least up to the point where the local field is fully supplied. With other industries the law apparently is that, with modern machinery and processes, an increase in the scale of operations that a single enterprise conducts increases the efficiency of productive forces up to a certain point at which the maximum economy is attained, and that this condition of highest efficiency is reached before a single concern monopolizes an entire field. These conclusions are necessarily based upon our present experience with the movement toward concentration of production, and may require subsequent modification; they involve, too, a number of questions which cannot be considered fully until we reach the chapter devoted to the subject of monopoly.

Conclusions.

III. The Laws of Supply

§ 51. The efficiency of productive forces must now be studied from a third point of view, — the conditions that prevail in an entire industry that is subject to the force of competition[1] and requires a number of rival enterprises to produce the full supply. And here we shall be under the necessity of distinguishing sharply between two standpoints from

Variations in the efficiency of an entire industry.

[1] An industry that is monopolized by a single concern comes under the laws governing the efficiency of production in one establishment. This subject has been treated adequately in the preceding pages. Here we need consider only those industries which are subject to competition.

which the industry may be studied; first, the condition of the industry for any brief period of time when its status may be regarded as fixed; and second, the condition that results from a change in the supply.

§ 52. Proceeding in the order just indicated, let us consider the efficiency of the productive forces that are employed by a competitive industry at a time when nothing occurs to alter materially the supply or the demand. Under such conditions we find that there are a number of different establishments which enjoy varying natural advantages, possess equipments of varying efficiency, and are managed with varying ability, so that the cost of production is not the same for all competitors. Of course the superior concerns are continually taking trade away from the inferior, which are constantly being driven out of business; but such competition does not, as a matter of fact, establish a uniform level of costs. It is a matter of common experience that some men or companies in an industry make money when selling at prices that leave others little or no profit; and this could not be the case if the cost of production were the same in all establishments. In recent years when trusts have been organized in so many of our industries, this fact has been clearly revealed as soon as the various plants have been brought under one management.

(a) Under static conditions; supply and demand remaining unchanged.

Upon these facts we base the law of varied costs: that, in any competitive industry, *rival establishments will furnish their respective portions of the supply at different costs.* To the producer who, laboring under the greatest disadvantages or possessing

The law of varied costs.

the least skill, furnishes his part of the supply at the greatest cost, economists apply the name of marginal producer. In our study of the causes that determine value, we shall see that the marginal producer plays an important part in the process.

§ 53. We now pass to the second standpoint from which the efficiency of an industry can be studied, and consider the variations produced by changes in the supply. If the production of any commodity is to be increased, this can be accomplished in one of two ways: either improvements may be made that enlarge the product obtainable from a given amount of land, labor, and capital, or additional amounts of the three factors must be invested in the industry. If the need for an increased supply stimulates improvements, or enables the competitors to increase the scale of their operations — with a consequent economy in production — then the marginal cost of the entire supply is likely to decline. If, however, such improvements are not made, the enlargement of the supply will, not improbably, raise the marginal cost of production; because it will be necessary to utilize inferior natural advantages or to call inferior labor or inferior organizing ability into the business.

(δ) Under dynamic conditions, involving changes in supply and demand.

Thus if the market requires an increase of ten per cent in the output of steel rails, the additional supply might be procured by operating the existing plants to the full limit of their productivity, and by enlarging the capacity of some of the best of them. These changes would result in increased efficiency; and the marginal cost of production might be

(ι) The marginal cost of an increasing supply.

somewhat reduced so that the increased supply would actually be procured at a decreased marginal cost. Upon the other hand, if the supply of wheat were to be increased by twenty per cent, it is possible that inferior lands would need to be taken into cultivation, and that the marginal cost of production would rise.

Manufactures and agriculture.

From consideration of such cases as these, some economists have been inclined to hold that the supply of a manufactured product can regularly be increased at a decreasing marginal cost; and that the supply of agricultural produce can be enlarged only at an increasing marginal cost. It is probable that such a view exaggerates the differences between manufacturing and agricultural industries. In manufactures it is certainly true that the producers are less likely, when they undertake to enlarge their output, to be obliged to utilize inferior natural agents;[1] and, for this reason, it is unlikely that an increased supply will be furnished at a greater marginal cost. But, upon the other hand, it cannot be doubted that agricultural methods are susceptible of constant improvement; and that sometimes the need of enlarging the supply might lead to a better organization of production and a reduction of the marginal cost. Moreover, it is not true that the need of increasing the supply invariably stimulates manufacturers to improve their methods of production and the organization of their industry; much depends upon the temper of the producers

[1] It should be remembered, however, that manufacturing industry is dependent upon agricultural and mining industry for its materials, which form a very important element in the cost of production. It is probable that a very great increase in the output of manufactures would raise the marginal cost of the larger supply of materials that would be required.

and upon the prospect of the increased demand proving permanent.

Conceivably, the supply of any commodity might be enlarged at a uniform cost; but it is hardly probable that the change in output will leave the conditions of production unaltered, so that the usual result will be to raise or to lower the marginal cost. The law, therefore, that governs the efficiency of production when the supply of a commodity is enlarged may be stated as follows: *An increased supply of a commodity will usually be obtained at an increased or decreased marginal cost*, the latter result being more likely to occur in manufacturing industry than in agriculture.

The probability of a uniform marginal cost.

Only a few words are needed to explain what must happen when the production of a commodity is reduced. If such a reduction is permanent, the producers will be obliged to compete with each other more sharply for what trade remains, and this competition will drive out of business those concerns which have been at the greatest disadvantage; *i.e.*, the marginal producers. For this reason a permanent reduction of the supply will have the effect of reducing the marginal cost of production.

(a) The marginal cost of a decreasing supply.

§ 54. We have now considered the conditions under which the supply of any commodity is produced, and have seen that the efficiency of production is likely to vary whenever a change occurs in the total output. The principles that govern such variations may be termed the laws of supply, and may be considered analogous to the law of demand, with which our

Conclusions.

discussion of consumption closed. In the following chapter we shall appeal to the laws both of demand and of supply in our explanation of the forces that determine the value of commodities.

FOR SUPPLEMENTARY STUDY

General: MARSHALL, Economics, 227–249, 357–370, 393–400; NICHOLSON, Political Economy, I, 122–130, 138–174.

CHAPTER VI

THE THEORY OF EXCHANGE

I. The Advantages of Exchange

§ 55. The advance of the human race from the lower to the higher stages of economic development has been accompanied and greatly aided by a constant extension of the process of exchange. Confined in the earliest times to dealings in easily transportable articles, such as precious stones or metals, ivory, spices, and fine fabrics, commerce has progressed with improved methods of transportation, so that even bulky and perishable commodities can now be readily exchanged between distant places. Withal, commerce has ever been a prime civilizing agency, bringing distant and hostile people into friendly intercourse, broadening men's ideas, extending knowledge of all the arts, and tending with increasing power to the maintenance of peace and international comity among the nations of the earth.

The influence of commerce.

§ 56. It was once commonly believed that an exchange of products could benefit but one of the two parties to the transaction, since it was thought that what one gained the other must lose. This view, which has not yet entirely disappeared, is wholly unwarranted, as will be made evident by considering the reasons why men desire to effect exchanges. Such a con-

Exchange advantageous to both parties.

sideration will demonstrate that ordinarily both parties to an exchange may and do profit thereby.

Reasons for advantageousness of exchange.

In the first place, individuals, communities, and even nations differ very widely in tastes and customs, so that one person or group of persons may prize highly a commodity that possesses little utility for others. Under such circumstances, which are the rule rather than the exception, an exchange of commodities will place each article where it will have the greatest utility, and increase materially the sum of human satisfactions. Again, both individuals and communities have different aptitudes for the various kinds of productive labor; and, by exchanging their products, can devote themselves to the particular callings for which they are best fitted. In this way the production of wealth will be vastly increased, and all concerned may be greatly benefited. Then it is usually true that persons and communities have different natural environments; arable or pasture lands, valuable mines or forests, sea fisheries, water powers, and favorable climatic conditions are not everywhere available, or available in equal degree. By exchanging cotton cloth for wheat, Massachusetts has been enriched by the bounty of the fertile prairies of the West, while Iowa and Kansas have profited by the water power and acquired skill of New England.

II. Market Value

§ 57. In the course of trade, commodities exchange for each other in certain definite proportions. A bushel of wheat, for instance, may command two bushels of oats; and, when this is the case, the value of wheat is said to

be twice that of oats. It appears, therefore, that the word "value" refers to the relations that exist between commodities in the act of exchange; and we may define it as *the power which a commodity has to command other commodities in exchange.* The value of every sort of merchandise is usually expressed in terms of money, for which all goods are generally sold. If wheat is worth ninety cents in money, and the price of corn is sixty cents and of oats forty-five cents, we know at once the relative value of the three grains without going to the trouble of exchanging a bushel of one for a bushel of the others. A price, in fact, may be defined as a value expressed in terms of money.

Value and price.

§ 58. Whenever we say that the price of wheat is ninety cents a bushel, we refer to the value in a certain market and at a certain time. Between different markets variations of prices may exist, and from one time to another changes are likely to occur. By a market is meant the establishment of such free intercourse between traders that a single price rules for a given commodity at a given time. Chicago, New York, and Liverpool have formed one market for the exchange of wheat ever since the electric telegraph brought these places into such close communication that the daily quotations must be practically the same, allowance being made, of course, for the cost of transporting grain to the Atlantic seaboard and across the ocean. In general, wholesale markets of staple commodities are now of national or international extent because modern methods of communication insure the closest intercourse between dealers in distant places, and make it possible for uniform

Markets.

prices to prevail over wide areas. In retail trade, upon the other hand, prices not only vary from one city to another, but are not likely to be uniform in all parts of a single city of any considerable size. This is because retail buyers, *i.e.*, the final consumers, do not take the trouble to watch prices over wide areas of country, but purchase from local dealers at such prices as are asked.

The existence of a market, it will be observed, in which the same product exchanges at a uniform price, presupposes the condition of competition. In the widest sense of the term, competition denotes any struggle of conflicting interests in which each person endeavors to accomplish his own ends in the face of similar efforts upon the part of rivals. In a market, competition may mean either one of two things. It may mean the endeavor of rival sellers to dispose of their goods or services on the best possible terms; and, on the other hand, the efforts of rival buyers to purchase goods at the best advantage. Or, in the second place, it may mean the process of bargaining between buyers and sellers for the best terms in each transaction. Where there are many buyers and many sellers, competition between rival sellers on the one hand and rival buyers on the other will usually establish a uniform price without any bargaining between buyers and sellers. In fact, much bargaining between buyers and sellers is likely to break the body of traders up into groups and to destroy uniformity of prices.

Competition.

§ 59. We are now ready to consider the causes by which value is determined, and shall find it convenient to begin with the problem of market value. During a recent year the prices commanded

Market value.

by a bushel of wheat in New York ranged from fifty-six to eighty-three cents, and were seldom exactly the same on any two successive days. These fluctuating daily quotations were the market prices of that commodity; and they measured the market value, which may be defined as the actual exchange power of a commodity in a market from day to day.

Investigation of the manner in which market value is determined will demonstrate that it depends upon the forces of demand and supply. By demand, as we have seen, the economist means desire coupled with the ability to purchase. It is small when buyers will take but a small amount of a commodity out of the market, and large when a greater quantity is bought. Our study of the consumption of wealth has already enabled us to formulate a general law of demand; and it was shown that demand varies[1] directly as the marginal utility of a commodity, and inversely[2] as its price.

Demand.

The supply of commodities in a market must be distinguished clearly from the stock of goods which producers or middlemen have on hand. The stock is the entire quantity of goods under the control of the sellers, while the supply is the amount that will be offered for sale at a given price. The stock is in the hands of men who have produced or purchased it

Supply.

[1] Since we are now studying the value of a commodity for short periods of time, we may omit the third factor mentioned in the previous chapter, *viz.*, changes in the resources of consumers.

[2] The words "directly" and "inversely" are not employed here in their strict mathematical meaning. Demand increases as utility increases, but not necessarily in the same proportion; it varies as price varies, but not proportionately.

for the sole purpose of selling at a profit; these holders, in fact, could have no conceivable use for any considerable part of their stock for purposes of personal consumption. They will offer for sale from day to day so much of the stocks as they consider it desirable to sell at existing prices. High prices will induce them to throw large quantities of goods into the market; while, if prices are low, smaller quantities will be offered for sale, and the remainder of the stock reserved until the market improves.

§ 60. Within a market at a given time, the price of a commodity will be fixed at a point where demand and supply will be equalized. Let us suppose that sellers of wheat have on their hands a stock of 1,000,000 bushels; that, at a price of eighty cents per bushel, they will sell the entire stock; that a price of seventy cents will induce them to place 800,000 bushels upon the market; and that a price of sixty cents would reduce their offerings to 600,000 bushels. Upon the other hand, we may assume that the buyers will purchase 1,000,000 bushels of wheat at sixty cents; 800,000 bushels at a price of seventy cents; and 600,000 at a price of eighty cents. It is evident that, under such conditions, a price of seventy cents will equalize supply and demand; and a little reflection will show that this must be the ruling price for the day, since competition of buyer with buyer and of seller with seller will make no other result possible. If the bidding by some buyers should raise the price to seventy-one cents, others would reduce their purchases or retire from the market, so that the demand would quickly fall from 800,000 bushels to some such figure as 790,000. At the same time the addi-

Market value equalizes supply and demand.

tion of one cent to the price would increase the offerings so that the supply might rise to 810,000 bushels. Such a situation would make it impossible for dealers who are anxious to sell 20,000 bushels to find a customer for their wheat, and would lead some of them to lower the price to seventy cents. Where competition exists, the demand and the supply must be equalized.

§ 61. In our chapter upon the consumption of wealth it was shown that commodities differ very greatly in the sensitiveness with which the demand for them responds to changes in price. Articles for which the demand is inelastic must rise in price materially before consumers will reduce their purchases considerably; and, therefore, a shortage in the supply will increase prices very much more than would be possible if the demand were elastic. Upon the other hand, if the stock is greatly increased, the sellers must reduce their price considerably before they can dispose of materially larger quantities. We learned also that, if hard times compel the consumers to retrench in their expenditures, the prices of articles with an elastic demand will suffer much earlier and more extensively than the prices of the other class of goods.

Elasticity of demand.

III. Normal Value

§ 62. Although market values are constantly changing, an underlying force controls ultimately all such fluctuations. Experience shows that an unusually high price is not likely to be maintained for a long time, and that exceptionally low prices are equally unstable. Moreover, if we compare the average market

Normal value.

prices for a considerable period, we shall find that the relative prices of different commodities remain tolerably constant, so long as no important changes occur in the uses to which they are put or the conditions of production. Some force, evidently, sets a limit to the fluctuations of the market, and restores prices continually to what the business world considers a normal level; in other words, there is a certain point around which market prices play. In this way we arrive at the concept of normal value or price, which may be defined as that value or price to which, under given conditions, market prices constantly return.

The force governing normal value.

§ 63. Commodities are produced by capitalists and laborers who desire to secure the largest possible returns for the sacrifices incurred in the process of production. In so far as they have the power of choice, producers will endeavor to invest their labor and capital in those occupations which promise them the best income from their exertions; and here we discover a force that tends to increase or restrict the stock of any commodity, and thus to affect the movement of prices. If two articles that require the same amounts of sacrifice for their production happen to have different values in the market, producers will increase the supply of that article which commands the higher price, and restrict the output of the other. The increased production of the dearer article will gradually lower its market value to the level of the other one representing the same expenditure of labor and capital. In this manner the cost of production influences the supply, and therefore the price, of commodities.

The competition of the market, by which prices are regulated from day to day, has been called "*commercial competition*"; and to the competition of producers who endeavor to regulate production according to the demands of the market, the term "*industrial competition*" has been applied. It is important for us to examine the actual processes by which this industrial competition operates. In case any industry, on account of the high prices now received for its products, becomes exceptionally profitable, many employers already engaged in it will be stimulated to enlarge their present plants; while outside capitalists, seeing an opportunity to make large profits, will establish new enterprises. In a progressive country, in every prosperous year, there is a large mass of accumulated profits which seeks investment; and, besides, it is possible to withdraw from the least profitable industries considerable capital that is not too highly specialized, and employ it where it will secure a better return. On the other hand, if the market price of any commodity has fallen to such an extent that producers are confronted with the prospect of small profits, or even loss, employers will begin to operate their factories upon half time or will close their doors and wait for conditions to improve. Some establishments, under such conditions, are likely to fail, and the capital invested in them is thereby removed from the field; while a few may find it possible to transfer a part of their free, or relatively free, capital to some more profitable enterprise. The burden of "hard times" falls most heavily upon the marginal producers, who, as we learned in the last chapter, have been producing at the greatest expense; and it is

Industrial competition.

chiefly through the failure or voluntary withdrawal of such establishments that the supply is reduced to a quantity that can be marketed at a profit.

Cost of production.

It appears, therefore, that, just as the marginal utility determines the demand for commodities, so the cost of production regulates the supply. We must, then, undertake a careful analysis of the different elements that enter into the cost of production, and must inquire: What things do individual producers, both capitalists and laborers, sacrifice in order that the work of production may be carried on?

Analysis of cost of production.

§ 64. In the first place, it should be observed, the natural agents utilized in production are not, under ordinary circumstances, an element in determining the cost.[1] Such agents are a part of nature's contribution; they do not increase, but rather lighten, the sacrifices that producers undergo. What production really costs to the persons who carry it on is the sacrifice of the labor and capital required for the creation of utilities.

First element: Labor.

The first element in producers' cost is the labor devoted to production. It may be expended indirectly in the manufacture of capital needed in an industry, or directly in the production of consumable

[1] If the supply of any material, such as copper, is monopolized, then those who control the mines may exact a large monopoly profit over and above the cost of production. This monopoly profit becomes an element in the cost of production in all industries that use copper. We are now studying competitive, not monopoly, prices, and will not pursue this subject further. In the case of land, which ordinarily commands a rent, it might seem, at first thought, that this rent must be an element in the cost of production. It is, of course, an item of expense to the producer, but we shall see that it is not one of the factors determining the normal value. This will be made clearer when we come to the discussion of rent.

commodities. The sacrifice which labor represents is in all cases the cost of supplying the required number of workmen.

Laborers are divided into various classes or grades, each of which possesses its own standard of living; and, in proportion as the standard is high or low, the cost of supplying any particular sort of labor will be larger or smaller. Workmen suitably trained to undertake delicate and responsible tasks cannot be had unless the remuneration is high enough to cover the cost of rearing and educating such persons. On the other hand, work that calls for no skill and places no responsibility upon the laborer can be done by persons whose standard of living is the lowest, and represents, as these things go, a small labor cost. So far as the element of labor is concerned, the cost of producing a commodity depends upon the standard of living of the class of workmen which the industry requires.[1]

Second element: Capital.

The second element in producers' cost is the expenditure of capital. In so far as capital represents mere labor devoted to the production of buildings, machines, or materials, the sacrifice occasioned by its use has been fully accounted for in the previous paragraph. But, as has been explained else-

[1] Where there is a practicable alternative for the laborer, the cost of obtaining his services may be influenced by one or two other factors. Work that is held in low social esteem will be avoided, unless the remuneration is somewhat more than enough to equal the standard of living of laborers of the grade required. So, too, work that involves risk of life or limb must be more highly remunerated. This is true, however, only when workmen have practical freedom of choice. Much unpleasant work, or work that is dangerous to health or to limb, is performed by men who receive the lowest wages, because there is no practicable alternative.

where (§ 29), the formation and renewal of capital require abstinence, or waiting, as well as labor; and in this we find a second element of sacrifice, independent of labor. This is not to say that every portion of a given stock of capital represents the same amount of sacrifice because, as we have seen, millionaires can accumulate capital far more easily than persons with small incomes. But it does mean that every unit of capital represents a sacrifice of the present to the future; and, therefore, involves something more than the mere expenditure of labor in producing it.[1]

Different costs of production.

§ 65. The problem of normal value is somewhat complicated by the fact that the cost of producing any commodity is not the same in all establishments (§ 52). Does the normal value of a commodity, then, depend upon the average cost of production, upon the lowest cost, or upon the highest? The

[1] A simple illustration will make evident the reality of the sacrifice represented by waiting. Suppose that five men, each furnishing his own tools and subsistence, undertake to make a boat that cannot be completed in less than five months. When finished, the boat will be worth $2000. If all the men wait until the boat is completed and sold, they may each receive $400, assuming, for convenience, that their labor has been of the same value. But now suppose that one of the men, instead of waiting five months for his share of the product, demands that the others advance $400 to him at the end of the first month. He would quickly be told that, since nothing was to be realized from the undertaking for five months, he could not expect to share equally with his companions in the distribution of the $2000 then available unless he would wait until the boat was completed and sold. He would not be given at the end of one month even one fifth of the $400 that would be due him at the end of five months. For him to receive advances of $80 at the end of each of the first four months would result in an unequal distribution of the sacrifice represented by waiting. He might, however, justly receive at the end of one month the present worth of the $80 which would be due for that month's labor when the boat had been completed.

answer must be that it is governed by the highest, or marginal, cost of production. If the amount of wheat normally consumed in any community is 1,000,000 bushels, the price must be high enough to cover the cost of production upon the poorest land that needs to be cultivated in order to obtain so large a supply; for otherwise such lands would go out of cultivation, the supply would fall below 1,000,000 bushels, and the price would be restored to the higher figure. The same thing is true in manufactures, or any other industry; consequently consumers must normally pay enough to cover the cost of producing the marginal unit of the supply. Moreover, competition between producers will not permit the price to be maintained for long above the point just indicated. If prices rise above the normal level, poorer lands and inferior factories can be brought into use, the supply will increase, and competition among producers will reduce prices to the former status. Under competition, therefore, the point around which market prices play is the marginal cost of production.

The extent of these differences.

Between the lowest cost of production to the most skillful or the best situated producer and the marginal cost, the difference will be greater in some industries than in others. In agriculture the product of any given tract cannot be increased beyond a certain point except under conditions of diminishing returns; so that, if the supply of any product is to be enlarged very greatly, it will be necessary to bring into cultivation one grade of inferior land after another, with the result that the marginal cost of production is likely to rise far above the cost upon the most fertile lands.

In manufactures and commerce, on the other hand, the product that can be obtained from any piece of land can be largely increased, and it is easier to secure economies from concentrating production in large establishments; so that there is less reason for great differences between the costs incurred by the various competitors.

Marginal cost the determining factor.

It has now been shown that market value depends primarily on the marginal utility of a given supply of any commodity, and that normal value, to which the fluctuations of the market must conform, is governed by the marginal cost of production. If the market price is the one that equalizes supply and demand at any particular time, the normal price is the one that will equalize production and consumption. "Value," says Professor Marshall, "rests like the keystone of an arch, balanced in equilibrium between the contending pressures of its two opposing sides. The forces of demand press on the one side, those of supply on the other." [1]

Importance of theory of normal value.

§ 66. In this discussion we have assumed that buyers and sellers, consumers and producers, are conducting their affairs with full knowledge of the demands of the market and of the conditions of production; and we have assumed, furthermore, that absolute freedom of competition has prevailed. It

[1] The following illustration may make the theory of normal value somewhat clearer. Suppose that the movements of market prices show that consumers will buy 100,000 tons of pig iron at $20 per ton, and that their purchases will increase to 300,000 as the price gradually falls to $10. Suppose that the best situated furnace can supply 50,000 tons at a price of $10, and that other furnaces can supply additional amounts at prices that gradually increase until 300,000 tons would come into the market

is needless to say that such conditions are realized only imperfectly in the actual world of business, and that prices cannot always be determined in the manner which has been described. This fact must be taken into account before we dismiss the subject of value, and in the next part of this chapter will receive careful consideration. But when all such qualifying circumstances are given due weight, it remains true that our theory of normal value possesses the highest theoretical and practical importance. It is based, in fact, upon a study of underlying forces that no economist or man of business can afford to neglect.

if the quotations should rise to $20. Then the following table may show where the price must be fixed in order to adjust production to consumption: —

Demand		Supply	
Price	Tons Bought	Price	Tons Produced
$20	100,000	$20	300,000
18	150,000	18	250,000
16	200,000	16	220,000
15	220,000	15	200,000
14	230,000	14	180,000
13	240,000	13	170,000
12	250,000	12	150,000
10	300,000	10	100,000

Under such conditions the normal price would be somewhere between $15 and $16. Perhaps a price of $15.50 would reduce the demand to 210,000 tons, and increase the supply to precisely this figure. Observe that the differences between the lowest and the marginal cost increase as the supply is enlarged.

IV. Exceptions to the Theory of Normal Value

§ 67. It is now necessary to consider a number of cases in which values do not conform to the laws which have just been explained. Some of these may be dismissed with the mere mention. Custom, for instance, often deters buyers from competing vigorously with retail dealers in the purchase of ordinary articles of consumption; so that retail prices, in the absence of this competition, diverge widely from the normal level. Taxes that are levied upon a few commodities, such as beer, spirits, or tobacco, increase the expense of production above the level represented by the labor and productive capital employed. And finally, the establishment of a monopoly gives to producers the power to raise prices far above the cost of production. This subject of monopoly, however, will require a separate chapter.

Custom, taxation, monopoly.

§ 68. An important class of exceptions arises from the fact that producers, especially laborers, are not always free to choose the occupations that they enter. Unskilled laborers can engage only in the humblest callings; skilled workmen lose the benefit of their acquired dexterity if they abandon the craft for which they are trained; and poverty or ignorance frequently prevents men from moving to the places where their labor would be in the greatest demand. In all such cases there may be little freedom of choice, and laborers may be obliged to turn to anything that offers, with the result that there is a failure to realize perfect competition. Value cannot be adjusted to the cost of production unless

Failure of competition.

producers are able to insist on getting a remuneration proportioned to the sacrifices incurred; and when a mass of unskilled labor can be had at "starvation wages," a commodity may be placed in the market for less than its normal price.

§ 69. The investment of vast amounts of fixed capital in modern industrial enterprises has introduced into business a new cause of disturbance of prices. A large fixed capital usually is a specialized capital, and is an investment that cannot, without great or even total loss, be withdrawn from the particular line of business to which it is expressly adapted. Consequently, whenever prices fall below a figure which will pay all the expenses of production and leave a fair profit, the managers of such large specialized capitals find themselves in a peculiar position. They find it impossible to go out of the business without incurring enormous loss; and at the same time it is difficult to curtail production without incurring an almost equal loss, a fact which requires further explanation. Specialized capital in the form of buildings and costly machinery requires constant attention and renewal, and oftentimes machinery depreciates very rapidly when it is allowed to remain idle. The expenses for interest and replacement of fixed capital continue about the same whether an establishment does a large business or remains idle. Moreover, insurance expenses and taxes remain about the same through dull times as through good. And the salaries of the most valuable, and therefore the most highly paid, employees may also be nearly the same, since trained superintendents and highly skilled mechanics are not always discharged

The effect of large fixed capitals.

even if business is temporarily suspended. The principal "variable expenses," which depend upon the amount of the product turned out, are the expenses for the less valuable kinds of labor and for materials. The result is that when prices fall below a point at which they yield a fair profit to the producer, the managers of very large establishments will not promptly reduce the product which they turn out. They know that the fixed expenses of their establishments will not be greatly decreased by running for shorter hours or by temporarily suspending production. Each manager will be likely to calculate that if he can sell his product for anything more than enough to cover the cost of materials and of common labor, he will have just so much toward paying the fixed charges; and that if, on the other hand, he refuses to produce at the lower prices, he will not be earning any part of the fixed expenses. The result is that, wherever large plants exist, a fall of prices will not promptly check the output of commodities, since each producer may endeavor to secure something toward paying his fixed expenses, even if he is obliged to sell at a price which little more than covers the cost of materials and common labor. Prices may remain below the full cost of production for a long time whenever such a condition of affairs exists.

§ 70. We must consider one other case in which it is difficult to trace the relation between value and costs. This occurs in its simplest form when an industry has one chief product upon which efforts are mainly concentrated, but also turns out a by-product. Thus, cattle may be raised for the purpose of securing beef; but hides, horns, hoofs, and bones may be obtained

Products and by-products.

as by-products. Similarly, wheat is a main product, and straw a by-product; or illuminating gas is a principal product, and coke a by-product. Under such circumstances how will the values of the main products and of the by-products be adjusted? The general principle is that the combined value of the main product and the by-products will approximate the total cost of carrying on the business. Producers will endeavor to regulate the production of joint products in such a way that the largest total return can be secured from the sale of all the products. Usually this can be done by producing all the principal product that can be sold at good prices, and then selling the by-products at any prices that will induce consumers to take them out of the market. If the price of the principal product rises, production will be increased, larger stocks of by-products will be secured, and their price will usually have to be lowered in order to dispose of them. In all cases, however, the total prices of all products will conform to the total cost of production; while the relative prices of the different products will be determined by the relative demand of the market for each commodity, in the quantities furnished by the business.

FOR SUPPLEMENTARY STUDY

General: HADLEY, Economics, 64–96; MARSHALL, Economics, 401–570; SEAGER, Introduction to Economics, 81–106.

CHAPTER VII

MONEY AND CREDIT

I. Metallic Money

§ 71. The earliest exchanges were effected by barter. Each party to a transaction traded goods that had little utility to him for other goods that had more. But in the direct exchange of one commodity for another there are serious disadvantages. A horse cannot be bartered for a cow unless each party to the exchange wishes to obtain precisely what the other has to offer, and such a coincidence of desires does not often exist. Then, too, many commodities are not divisible into fractional parts; although three hats may be exchanged for a coat, it is impossible to obtain one hat by offering one third of a coat in payment. Again, if one hundred different articles are continually bartered for one another, they may exchange in any one of 4950 combinations; and it is necessary for traders to know all of these exchange ratios if they would avoid being cheated.

Barter.

§ 72. Gradually men devised a method of avoiding these difficulties. They saw that, while some commodities were demanded only upon certain occasions or under certain conditions, other goods were almost invariably in demand, and were acceptable to

The origin of money.

nearly all persons. Among hunting tribes skins of animals were always in demand, since they were the principal product of labor, and were durable and useful for many purposes. With pastoral peoples cattle and sheep possessed this quality, since they were useful in very many ways and any person could without trouble add them to his herds. So, among the American Indians, strings of wampum were objects of general desirability, since they served to gratify a universal desire for ornament. When it was found that any commodity was always in demand, a way was opened by which the difficulties of barter could be avoided. If a man possessed corn and desired to exchange it for clothing, he need no longer find another person who desired to exchange precisely the right kind of clothing for the exact amount of corn offered. He would find it advantageous to accept furs, or cattle, or any universally desirable commodity in payment for his corn; and then he could easily find many people who would be willing to exchange clothing for the furs or cattle.

In this manner the exchange of product A for product B is broken up into two distinct processes: (1) the sale of A for some universally acceptable article, C, which serves as a medium of exchange; and (2) the purchase of B by means of this medium, C. In this way the article that serves as an intermediary acquires a new use. Formerly it was a mere commodity, valued simply as an object of personal consumption; now it is a peculiar commodity which has acquired the additional function of serving as a medium of exchange. Such a commodity is money.

Money the medium of exchange.

§ 73. A list of the various articles that have been, at

different times or places, employed for this purpose could be made extremely long. Besides cattle and furs, rice, tea, salt, tobacco, dates, cocoanuts, grains, cowry shells, and many different metals have served as money. In time the metals proved to be superior to other commodities; and, in the end, gold and silver displaced the baser metals. The predominance of gold and silver has been due to a number of reasons:—

The money metals.

(1) The beauty of the precious metals made them universally desired for the purpose of ornamentation.

(2) Being difficult to procure, they had a very high power in exchange; so that small amounts of them would command large quantities of other commodities, which is another way of saying that gold and silver are highly portable.

(3) They are durable and can readily be distinguished from other substances. They are highly divisible and malleable, so that they can easily be converted into coins of uniform quality and weight.

(4) They are extremely stable in value. The world's stock of gold money, bullion, and wares may be estimated at about $10,000,000,000 at the present day, while the annual output of all the gold mines is about $300,000,000. The result is that, unlike wheat or cotton, the value of gold is but slightly affected by changes in the amount produced from year to year; so that the yellow metal can be accepted for commodities or services with confidence that the medium of payment will not fluctuate sharply in value from one season to another. Moreover, on account of its portability, the value of gold will be substantially the same in all countries.

§ 74. At first the precious metals circulated by weight, and those who handled them were obliged to provide means of testing their purity and determining their weight. Such inconvenient methods were at length rendered unnecessary by the introduction of the process of coinage. The first step in this direction was to impress upon a bar or ring or wire of the metal a stamp certifying to the weight and fineness, and this work was often done by goldsmiths upon private account. Gradually, in order to have greater security and uniformity, governments assumed exclusive control of the process, and put an end to all private coinage. Improvements in the art finally led to stamping both sides of the coin and milling the edges, so as to make attempts to tamper with money as difficult as possible; and the designs impressed upon the metal were made delicate and intricate in order to foil counterfeiters. Thus with a well-developed coinage system, money passes by tale, *i.e.*, by count; and traders need no longer resort to weighing in order to avoid being cheated.

Coinage.

Free coinage exists when any owner of bullion has the right to take the metal to the mint and have it coined into money. The United States, for instance, at the present time, allows the free coinage of gold but not of silver. No inconsiderable expenditure of capital and labor is required for the operation of a mint, and governments have often thrown upon the person who presents bullion the cost of converting it into coin. In the United States, however, no charge is made for coining standard gold bullion, *i.e.*, bullion that is nine tenths fine; so that the coinage of gold is gratuitous, as

Free coinage: gratuitous coinage.

well as free. Since coinage is gratuitous, the amount of bullion coined into an eagle is always worth $10; and, since the eagle contains 232.2 grains of fine metal, the mint price of an ounce of gold is 20.67\frac{18}{100}$.[1] If, on the other hand, a country makes a charge for coinage, bullion will be worth in the market just so much less than coins containing the same amount of metal.

Seigniorage.

Oftentimes, governments not only have made a charge for coinage, but have exacted more than is required to cover the cost of the operation; such a charge is usually called seigniorage,[2] and is collected by withholding part of the bullion brought to the mint. In former centuries many of the sovereigns of Europe deliberately debased their coins by abstracting a seigniorage of from ten to ninety per cent. Modern countries usually debase the small pieces used for fractional currency;[3] but do this by purchasing metal upon government account and converting it into as many coins as it seems desirable to make. In the United States our so-called standard silver dollar has become a debased coin on account of the progressive fall in the value of silver since 1873,[4] and our fractional silver pieces contain still smaller

[1] That is, an ounce of fine gold will make two eagles, with a remainder of $67\frac{18}{100}$ cents. Of standard gold, nine tenths fine, the eagle contains 258 grains; and the mint price of standard gold is 18.60\frac{1}{2}$ per ounce.

[2] A charge which only covers the cost of coinage is called brassage.

[3] This prevents the melting up of such coins, since the metal they contain would be worth less than their face value.

[4] The silver dollar contains $371\frac{1}{4}$ grains of fine silver. In 1873 this quantity of the white metal was worth $1.003 in gold; in 1903 it was worth $0.419. The half dollar contains not $185\frac{5}{8}$ grains of fine silver, but only $173\frac{6}{10}$. Since 1878 the government has coined about 560,000,000 dollars from silver purchased on its own account.

proportionate weights of fine metal than the standard dollar. It is highly important, as we shall learn, that a country's principal coins should not be debased; but it is convenient to debase the fractional currency in order to oblige persons who wish to melt or export money to select the larger pieces which, dollar for dollar, cost less to coin.

After establishing public coinage systems, governments took the further step of declaring that their coins should be received by all persons in the payment of debts. In this manner coins are made a legal tender, and must be accepted in discharge of all obligations unless by special contract some other medium of settlement has been agreed upon. Thus, in the United States, all our gold coins, the silver dollar, and the United States notes are declared a legal tender;[1] but the courts will enforce contracts that call for payment in gold. **Legal tender.**

§ 75. The belief is sometimes expressed that money originated by virtue of the action of governments, and is, consequently, purely a creature of the law. This is the "fiat" theory. But the historical fact is that a medium of exchange was established solely by the acts of individuals, and that governments, for a very long time, had nothing to do with its development. At a later date, governments instituted coinage systems, made their coins receivable at the public treasury, and finally declared them a legal tender for private debts. **The "fiat" theory.**

[1] Fractional coins are a tender only for small sums, and national bank notes are not a legal tender. The United States issues gold and silver certificates against coined gold and silver actually deposited in the Treasury in exchange for them; these certificates, while everywhere acceptable, are not a legal tender.

Their action greatly extended the usefulness of money, but did not originate it. Money was at first a mere commodity which, on account of its superior desirability and convenience, obtained general currency as a medium of payment.

§ 76. When, however, a commodity began to circulate as money, it acquired a new use, a peculiar property, which thereafter distinguished it from all other commodities. Gradually, also, it acquired other functions. It came to serve as a value denominator, *i.e.*, a common denominator in which the exchange values of all other things are expressed. Obviously the process of exchange was greatly facilitated when, instead of having to remember all the ratios in which each one of a hundred commodities exchanged for each of the others, traders needed simply to keep informed concerning the hundred prices which such commodities would command when exchanged for money. Closely connected with this second function of money is a third, that of serving as a standard for deferred payments. In renting lands, or in agreements for loans secured by mortgages, and in similar contracts, it is necessary to arrange for the payment of obligations at distant periods of time. Long-term contracts may extend for periods of ten, fifty, or one hundred years; and it is highly important that the medium in which payments are made should be as stable as possible. For such purposes neither gold nor silver is a perfectly satisfactory standard, although the former is superior to the latter. In fact, it seems that no safe method of insuring ideal justice in deferred payments has yet been devised.

Conclusion: other functions of money.

II. Credit and its Instruments

§ 77. In addition to money, the world of business employs various instruments of credit in effecting a considerable proportion of its exchanges. Credit may be defined as *the power to obtain commodities or services at the present time in return for some equivalent promised at a future date.* In such a country as the United States it is probable that about one half of all exchanges is effected by means of instruments that evidence some sort of a credit transaction and serve as proof of the obligation of the debtor to make payment at some future time.

Credit defined.

§ 78. By means of book credits many exchanges are effected without the use of money. A may purchase $200 of household supplies at a store kept by B, while B receives $180 of farm produce from A. At the end of a quarter the whole series of transactions, aggregating $380, may be settled by the payment of the balance of $20 which is due to B.

Book credits.

§ 79. A second instrument of credit, the promissory note, sometimes enables payments to be made without the employment of money. The payee, or the person to whom the note is due either upon demand or at the end of a certain time, can indorse the note and thus make it payable to a third person to whom he may happen to owe money. In this manner, the promissory note, by successive indorsements, may have effected a number of exchanges before it is finally presented for payment by the person who originally drew it.

The promissory note.

§ 80. A check is an order which a person draws upon

his banker, directing him to pay a certain sum to the order of the person to whom the check is payable, or to the bearer. Like a promissory note, it may pass, by indorsements, through several hands; and it may be the medium in which a number of payments are made before it finally reaches the banker upon whom it is drawn. But even when this does not happen, the use of checks makes it unnecessary to employ money. Let us assume that A owes B $50, that B owes C $50, and that C owes D $50, and let us also assume that the four men have deposits at the same bank. Then A, B, and C may draw checks for $50 payable to B, C, and D, respectively; and in due time B, C, and D will deposit at the bank the checks received from A, B, and C. Then the banker will deduct from the deposits of A, B, and C the amounts of the checks drawn by them, while he will credit B, C, and D with the amounts of the checks which they present. The net result will be that the deposit of A will be decreased by $50, the deposits of B and C will remain unchanged, and the deposit of D will be increased by $50. In this way, the three debts may be paid without the actual use of any money.

The check.

If now the four men happen to keep their accounts with different banks, the checks will be settled between the four institutions. In cities of any considerable size this work is performed by clearing houses. The customers of each bank deposit with it the checks that they receive, and are credited with the sums thus represented; then, once a day, the bank sends to the clearing house checks drawn upon other institutions. There the bank finds representatives of other institutions

The clearing system.

who are ready to present for settlement the checks drawn by its depositors. If one bank sends to the clearing house $100,000 of checks drawn upon other institutions, and finds there checks to the amount of $90,000 drawn upon itself, it will receive the balance of $10,000 that stands to its credit; if, on the other hand, the checks drawn on the bank had amounted to $110,000, a balance of $10,000 would have been due to the clearing house.

Centralization of bank clearings.

Banks located in different cities settle their mutual obligations with almost equal ease. Country banks have agents, or banks with which they correspond, in the nearest clearing-house city, so that every clearing house settles accounts for a considerable territory adjacent to it. Then, finally, the New York Clearing House acts as a central clearing station for the whole country, since every important city bank corresponds with some institution in New York City.[1]

The bill of exchange.

§ 81. A bill of exchange, also called a draft, is a written order by which the person who draws the instrument directs a second person (the drawee) to pay a sum of money to a third person (the payee), either at sight or after a certain time. Thus if A owes $100 to B, and B owes $100 to C, both debts can be canceled if B draws a bill ordering A to pay $100 to C; while, by indorsement, C can use the instrument in settling a debt of $100 owed to D. Bankers make a business of buying bills of exchange, and will sell to any debtor a bill of exchange with which he may settle an obligation due in a distant

[1] In 1903 the total exchanges of all the clearing houses of the United States aggregated $114,068,837,569, of which the clearings at New York amounted to $70,833,655,940.

city.[1] In this way evidences of debt accumulate in the hands of bankers in various cities; and the bills due, say from New York to Chicago, can be used to offset a similar amount of bills due from Chicago to New York. No money need be sent from one city to the other except in payment of whatever balances may be due upon the whole body of transactions.

Foreign bills of exchange.

In domestic trade payment by checks has to a considerable extent displaced the use of bills of exchange, which, fifty or sixty years ago, were the ordinary medium of payment between distant places. In foreign dealings, however, the bill of exchange retains its importance; and foreign bills will require somewhat detailed study. In principle they are precisely like domestic bills. They are dealt in by private bankers and some of the larger incorporated banks. If New York has been buying more goods or securities from London than Englishmen have purchased in the United States, New York dealers in exchange will encounter a large demand for remittances to London and small offerings of bills drawn upon English creditors; while in London there will be heavy offerings of bills drawn against American debtors and a small demand for remittances to the United States. Such conditions make it probable that gold will have to be sent to England sooner or later, in order to settle the balance due to that country; and exchange will be said to be unfavorable to New York and favorable to London.

[1] When a creditor draws an order upon his debtor, the debt may be said to be "drawn for"; when the debtor buys a bill to remit to his creditor, the debt is "remitted for." This distinction is important because in practice the two classes of transactions are called by the same name, so that the beginner is often confused.

Meanwhile, before any shipment of gold occurs, interesting developments will appear in the rate of exchange. The English pound sterling is worth $4.866 of our money; and if the debts due to England should precisely equal those due to the United States, bankers could settle all international obligations by the mere balancing of accounts without the shipment of money, and exchange would stand at par.[1] When, however, exchange becomes unfavorable to New York on account of its English debts exceeding those which London owes in this country, dealers will raise the price of bills above $4.866. To a person who owes money in London they will not sell a draft at par, because of the prospect of having to ship gold in order to settle for all obligations that they incur for remittances to London. But they will pay more than $4.866 to any person who offers to sell them a bill drawn upon an English debtor, since every such bill cancels an equivalent amount of indebtedness to their London correspondents, and reduces the balance that must be remitted in gold. For this reason exchange will rise above par when it becomes unfavorable to New York.[2]

The rate of exchange.

There are limits, however, to a rise or fall in the rate of exchange. The cost of shipping gold across the ocean is, at the present time, not far from two cents for each

[1] This means that $4.866 in New York would be worth the same as a pound in London.

[2] In a similar manner exchange falls below par when trade is running in favor of New York. Under such conditions, bills drawn upon English debtors are abundant and will command a lower price; while remittances to London can be purchased from the dealers at less than $4.866, since every such transaction cancels part of the balance which London owes New York, and reduces the shipments of money to the United States.

pound sterling; and this cost fixes certain bounds beyond which exchange cannot move, except under the most extraordinary circumstances. If the rate rises above $4.886, it becomes as cheap for any one to settle a London debt by shipping gold as by purchasing a bill of exchange; and, accordingly, when exchange rises to this figure, exports of gold may be expected.[1] On the other hand, the rate cannot fall below $4.846 without inviting imports of gold which put an end to the decline. Between these lower and upper limits, exchange fluctuates according to the conditions of international indebtedness.

Limits to the fluctuation of the rate.

§ 82. Bank notes are a final form of credit instruments employed in facilitating exchanges. They are merely promissory notes issued by a bank and made payable upon the demand of any holder. Since they circulate from hand to hand without indorsement, and are payable to the bearer without the requirement of identification, they are far more effective as a medium of exchange than any of the other instruments of credit.

The bank note.

III. The Laws of Money

§ 83. The laws governing money now claim attention, and we may consider first of all the principle that deter-

[1] In point of fact shipments have taken place in recent years when the rate was considerably under $4.88. This happened in "triangular operations," in which, when the rate of exchange on Paris was unfavorable to London, the gold which London shipped to France was drawn from New York. In these cases the small profit realized on a shipment from New York to London plus the profits derived from shipments from London to Paris has carried gold out of the United States when the rate of exchange was $4.87¼.

mines its value. If gold were a mere commodity, its value would depend first upon its marginal utility as a consumer's good and ultimately upon its marginal cost of production. But it has acquired a peculiar function, that of serving as a medium of exchange, and this fact complicates the forces by which its value is determined.

The first principle: the value of money.

Obviously the value of money will always be measured by the number of commodities that it will command, rising as this number increases, and decreasing as it falls. This is another way of saying that, when prices are low and a given amount of money will command a large quantity of commodities, the value of the circulating medium is high; and that, when prices are high and the purchasing power of money is small, its value is low. In other words the value of money varies inversely with the general level of prices.

Money and prices.

§ 84. It is a familiar fact of experience that the purchasing power of money, *i.e.*, the general level of prices, varies materially from time to time. Between 1850 and 1873 prices rose both in Europe and in the United States; then, for a period of twenty-three years, they steadily fell, until, in 1897, another upward movement began.[1] As nearly as can be

Changes in the level of prices.

[1] In measuring movements of prices, tables of index numbers are usually employed. The average price of each one of a large number of commodities is ascertained for some year or period of years, and this is called 100 as a base for measuring subsequent movements. If one hundred commodities are examined, the index number of the first year will be 10,000. Then the prices for each commodity for subsequent years are computed as percentages of the price of the basic year or years. Thus if, of the one hundred commodities, twenty rise ten per cent during the next

ascertained, the purchasing power of gold decreased about twenty per cent between 1850 and 1870, and it increased nearly forty per cent during the period that ended in 1897. Since 1897 the purchasing power of gold has declined by about twenty per cent.

§ 85. Fluctuations in the value of money are to be attributed to the same factors that govern the value of everything else — the forces of demand and supply. All of the exchanges regularly effected through the agency of money [1] constitute the demand for money, a demand that is just as real as the demand for cotton or for wheat. Goods are produced, under modern conditions, for the purpose of being sold; and all commodities in the market represent a demand for the medium of payment, whatever that may be. To a very considerable extent, this medium of payment is money; and it is evident that when the number of exchanges, *i.e.*, the volume of business, is large, the demand for money will increase; while if the volume of business declines, there will be a decrease in the demand for money.

The demand for money.

The supply of money depends upon the number of coins in circulation and the rapidity with which they pass from hand to hand. When trade is brisk, the circulation of money becomes rapid, and the supply is really increased even though no change takes place in the number of coins; while in times when business is depressed, the movement slackens and the supply

The supply of money.

year, sixty remain unchanged in price, and twenty fall five per cent, the index number for the year will be 10,100, which will indicate an average rise of one per cent.

[1] In a subsequent paragraph we shall take account of the fact that many exchanges are effected by means of credit.

is virtually decreased. Except for changes in the condition of business, the rate of circulation depends upon the habits of the people and may be regarded as a fixed quantity; so that if there is an increase or decrease in the number of coins, it is safe to assume that the supply of money is increased or decreased, unless it can be shown that something has happened to retard or accelerate its circulation.

If, now, we assume that the supply of money remains stationary, and that the volume of business in any community increases, the value of money will rise on account of the increased demand for a medium of payment; while if the volume of business declines, the value of money will fall. In the first case the tendency will be toward lower prices; and, in the second, prices will tend to rise. But if the demand remains unchanged and the supply increases, the value of money must fall, which means, of course, that prices become higher. And, finally, if the supply of money is decreased, its value tends to rise, and prices will fall to a lower level.

Effects of changes in demand and supply.

The actual operation of such changes is seen very clearly whenever there occurs a variation in the production of gold. For instance, in California in 1849, the new gold increased enormously the prices of shovels, pans, top-boots, blankets, bacon, and flour — the commodities needed in the mining camps; and then the gold found its way to the East in payment for miners' supplies purchased in the leading cities. Within five years the annual gold production of the United States advanced from $1,000,000 to $60,000,000, and the rise of

Illustrations.

prices became general as the supply of money steadily rose.[1] When, after 1870, the world's gold output began to decline, the rise of prices was checked; and before long a downward movement set in.[2] This continued until recent years when the effect of improved methods of treating ore and the development of the South African mines again enlarged the output, which has now reached proportions never before known.[3]

Gold used in the arts.

§ 86. We must now consider the relations that exist between the stock of money and the quantity of the money metal used in the arts. As a consumption good, the marginal utility of gold depends simply upon its usefulness in the arts; as money, its marginal utility depends upon the general level of prices, *i.e.*, its purchasing power. If free coinage is permitted, it is obvious that gold bullion will be converted into coin when the purchasing power of the metal is greater than its marginal

[1] The Californian and Australian gold discoveries increased the world's output prodigiously, as is shown in the following table, which gives the total production by decades: —

1831–1840 = $134,841,000
1841–1850 = $363,928,000
1851–1860 = $1,332,981,000

[2] The world's total output decreased by decades, as follows: —

1861–1870 = $1,263,015,000
1871–1880 = $1,150,814,000
1881–1890 = $1,060,056,000

Other forces, it should be remarked, were operating at the same time to cause a decline in prices.

[3] By five-year periods the production of gold was as follows: —

1886–1890 = $564,474,000
1891–1895 = $814,736,000
1896–1900 = $1,286,487,000

utility as a consumption good; while coin will be melted up into bullion when the conditions are reversed. In this way, under free coinage, the marginal utility of gold tends to remain about the same, whether the metal is employed as money or used in the arts.

§ 87. This brings us to the question whether the cost of producing gold has any effect upon its value; and it will be seen that, undoubtedly, such an influence may come into play, although much more tardily than in the case of other commodities. When the purchasing power of gold is high, prices are low; and, therefore, the cost of operating gold mines is considerably reduced, even though no improvements occur in the methods of production. The lower cost of operation increases the profits of the better mines, and makes it possible to work poorer mines that yield inferior grades of ore or can be operated only at a larger expense. Thus the output tends to increase, the supply of gold is enlarged, and more coins come into circulation, tending to raise prices and to reduce the purchasing power of money. This process is likely to continue until the higher prices increase the expense of operating the poorer mines sufficiently to put an end to their operation, and thus check the output of gold. In this manner, if a considerable period of time is taken into account, the marginal cost of producing gold, *i.e.*, the cost at the poorest mines in use, influences the supply and hence the value of money. But the adjustment of the purchasing power of gold to the marginal cost of production can be brought about only after a sufficient number of years have elapsed to enable the changed conditions of output to influence

The cost of producing gold.

materially the supply in existence. Thus, to take the latest example, the annual production of gold reached its lowest point between 1881 and 1885, when it averaged only $99,116,000 per year. From 1886 to 1890 the average output rose slightly to $112,900,000, without affecting prices; while from 1891 to 1895 it increased to $163,000,000 without checking the decline of the index numbers. After that, however, as the production rose to an annual average of $257,000,000 for the next five years, a rise of prices began; and the purchasing power of gold is likely to show a continued decline as long as the output remains at its present figures, about $300,000,000 a year.

§ 88. It is now necessary to take into account the fact that perhaps one half of the whole volume of business transactions is dispatched by means of various instruments of credit. This fact has led some writers to the conclusion that the growth of credit has invalidated the theory that the purchasing power of money depends on the conditions of supply and demand. And if the use of credit could be carried to any extent whatever, so that, in case the supply of money should greatly decrease, all exchanges could continue on the old basis simply by resorting to a larger supply of credit, the criticism of the accepted theory would be well founded. Money would have no effect on prices if it were not necessary for the transaction of the existing volume of business at the present level of values.

The influence of credit on the value of money.

But the employment of credit cannot be increased at will in order to prevent a change of prices. Book credits, promissory notes, and bills of exchange are now used about as extensively as business men find it convenient to

employ them. A sudden currency famine might lead to a greater use of these and other devices for exchanging commodities without the use of money, but not to such an extent as to obviate all inconvenience or prevent a sharp fall of prices. It is not accident, but the extent to which they are found convenient, that limits the use of these instruments of credit.

The effect of book credits, promissory notes, and bills of exchange.

Bank notes and checks are employed in quantities that vary from year to year; and it might seem, at first thought, that a deficiency of metallic money could be remedied easily enough by an increased employment of these forms of bank credit. Unfortunately, however, there are very definite limits beyond which bank notes and checks cannot be used without the most serious danger. The limits arise from the fact that both of these forms of bankers' obligations must be instantly convertible into cash if they are not to depreciate — a consideration which will require further treatment in subsequent pages. At all times bankers must maintain a reserve of ready money, which, according to circumstances, should be from five to thirty per cent of the amount of money owed to depositors and holders of notes. It appears, therefore, that the employment of checks and bank notes is limited by the necessity of maintaining a specie reserve, so that there are bounds beyond which the use of these instruments cannot be carried without an increase of the supply of ready money. For this reason it is safe to conclude that there must always be a connection between the amount of money in circulation and the extent to which credit can be employed.

The effect of bank notes and checks.

§ 89. Full importance will be given to the part which credit plays in the exchange of commodities if we make a slight restatement of our theory. Book credits, bills of exchange, and promissory notes suffice for many exchanges in which no money is used; and we may consider that their effect is to reduce, by so much, the demand for money. Bank notes and checks, on the other hand, call for the use of some money as a specie reserve, but they enable one dollar thus held by a banker to do the work of three or four dollars in actual circulation; thus they increase the efficiency of a given stock of coin. Bearing these considerations in mind, we can formulate the following complete theory: *The value of money depends upon the demand, as decreased by certain instruments of credit; and upon the supply, as increased by the heightened efficiency of those coins which are held as a reserve for the circulation of checks and bank notes.* Ultimately, as we have seen, the cost of producing gold affects its value; but this fact needs no further attention.

Summary: as to the value of money.

§ 90. We now pass to a second principle relating to money, which is known as Gresham's law. As far back as the record extends, governments have continually tried experiments with debased money. By the side of specie they have forced paper into circulation; they have gathered up coins of full weight and recoined them into lighter pieces; or, when one metal had become the established medium of exchange and standard of value, they have issued money made of the other metal. In the last case the new coins have been given a certain nominal value in terms of the old, but changes in the market ratio of gold and silver have sooner or later made

The second principle: Gresham's law.

the metallic contents of the one kind of money less valuable than the contents of an equal nominal amount of the other. From centuries of such experience economists have derived a law governing the operation of debased money, which has been named after Sir Thomas Gresham, in his day "the greatest merchant of London," who in the sixteenth century called to the attention of Queen Elizabeth the fact that "bad money drives out good."

With other things the worse may be displaced by the better, since it is for the interest of consumers to buy the best that the market affords. Money, however, is in demand, not as an object of personal consumption, but as a medium for paying debts; and it is obviously for the interest of the debtor to employ the cheapest sort of coins that the law will permit him to offer his creditor. In the seventeenth century, when Massachusetts made public taxes payable in cattle, the taxpayers naturally turned over to the provincial treasury the poorest cattle in their pastures, until, in 1658, the Great and General Court was obliged to enact that no man should discharge the rates "with leane cattle." In the eighteenth century when North Carolina made seventeen different commodities legal tender for debts, public and private, the governor of the province observed that it was "a stated rule that, of so many commodities, the worst sort only were paid." Illustrations of the truth of Gresham's principle might be multiplied, but the testimony of reason and experience is so uniform that it is unnecessary to dwell longer upon the subject.

Illustrations.

The operation of Gresham's law does not depend, under modern conditions, upon the action of the mass of the

people in picking over the various coins in order to select the cheapest medium for the payment of debts. The work is done far more promptly and quietly by bankers, money dealers, and goldsmiths, whose business compels them to note the smallest differences in the bullion value of coins. A goldsmith will select only new gold eagles that have lost none of their weight through abrasion, when he places money in the melting pot; and a banker will select the same sort of pieces when he exports gold to England, where it must pass as so much bullion. Thus lighter coins remain in domestic channels of circulation, and heavier money disappears. So, too, if an unlimited quantity of inferior silver coins or paper money should be forced upon the country, it would be chiefly the bankers, money changers, and goldsmiths into whose coffers our gold would disappear.

Method in which the law operates.

§ 91. But there are certain limits to the power of inferior money to drive out superior. At the present moment something more than $1,000,000,000 of gold is supposed to circulate in the United States, or to be held in bank reserves and the federal treasury. Yet by the side of this standard money circulate $353,713,000 of paper issued by the government, and silver to the nominal amount of $629,348,000 which, if put into the melting pot, would be worth only 40 cents on the dollar. How, indeed, are these facts to be reconciled with our law that cheap money drives out dearer?

Limitations on the action of the law.

The difficulty is cleared up when the law is modified so as to read: *Cheaper money drives out of circulation a sub-*

stantially equivalent amount of dearer money. The reason for such a limitation of the principle is not hard to explain. The present volume of business in the United States could not be transacted *at the present level of prices* without about as many dollars of all kinds as are now in circulation. If a large part of our present supply of gold should leave the country, prices would fall to a marked degree unless an equivalent amount of paper and silver were added to the currency. Such a fall in prices would cheapen commodities so greatly that gold would flow back into the country in order to purchase various products on the favorable terms that would be offered. Our present supply of gold, therefore, is in no danger of leaving the country if we see to it that no addition is made to the stock of paper and debased silver now in circulation. The debased money already issued has, undoubtedly, driven out an equivalent quantity of gold, or, what is the same thing, has prevented it from coming to us. But it cannot drive out all of the gold because its supply is limited to a quantity that is not sufficient to carry on the business of the country except at abnormally low prices that would attract the yellow metal back to our markets. Bad money, then, displaces an approximately similar amount of good money, but no more.

The law restated.

Indeed, if a country which originally had no money but gold should issue paper or debased silver up to 80 or 90 per cent of its total circulation, 10 or 20 per cent of its former gold supply would remain in its accustomed place if all the other factors in the situation were unchanged. In strict theory it might be possible to issue debased money to the extent of 99 per cent of the

Additional considerations.

gold supply without driving the remaining fraction of the yellow metal out of circulation or raising prices. Generally, however, the threat of a large issue of debased currency has the effect of checking business activity and so of reducing the demand for money. If the demand declines by 20 per cent, then all gold would be driven out of circulation after silver or paper had been issued to the extent of 80 per cent of the former money supply. This fact, moreover, is usually overlooked whenever a country begins to revel in the delights of a plentiful supply of cheap money; it is, indeed, one of the chief things to be apprehended when the process of tinkering with a sound currency begins.

§ 92. Our third principle is the law governing the territorial distribution of the precious metals. Gold and silver are not produced in material quantities in all countries; in fact, production is localized in a few regions that are noted for their large output. And yet, in proportion to their needs, all countries seem to be supplied tolerably well with gold, or silver, as they prefer. Evidently there must be some process by which this uniform distribution of the annual output is carried on.

The third principle: territorial distribution of precious metals.

The process is nothing else than international exchange. If it ever happens that the purchasing power of the metal in any country is materially higher than in others, *gold inevitably flows to that place where its value is greatest.* This is another way of saying that low prices attract gold away from regions where prices are higher. In countries where there is a large output of the precious metals, the purchasing power

The force governing the distribution.

of gold would be greatly reduced if none of the annual product was exported to lands that are without important mines. Differences in general levels of prices, therefore, are the motive power that forces the constant outflow of gold from the regions where the principal mines are found.

§ 93. The position of a gold-producing country is well illustrated by the experience of the United States. Prior to the Californian discoveries in 1848, this country produced an insignificant quantity of gold and silver, and was obliged to depend on its foreign trade to bring in an adequate supply of the precious metals. From 1821, when the reported statistics begin, down to 1850, when the gold production suddenly rose to enormous proportions, imports of gold and silver into the United States exceeded exports by $70,000,000. In 1851, however, the pendulum swung in the other direction, and the net exports were not less than $24,000,000. During the decade from 1851 to 1860 the exports of specie exceeded imports by the enormous sum of $417,608,000, which was nearly three quarters of the total output of the mines; and since that time the United States has been normally a gold-exporting country.[1] No other result could have been expected.

Position of gold-producing countries.

§ 94. Other causes sometimes influence the movements of specie, as we shall learn in a later chapter; but the principal factor is the tendency of gold to seek the market

[1] From 1878 to 1883, and from 1897 to 1902, gold imports largely exceeded exports. Both conditions were due to unusual developments of our foreign trade. The last gold import movement seems now to have reached its end. As long as the United States continues to produce $70,000,000 to $80,000,000 of gold, it is likely to remain, normally, a gold-exporting country.

where prices are lowest. The gold movement is automatic, regulating itself according to the needs of business, unless cheaper money is issued to cause a serious displacement. If gold exports are not due to the action of Gresham's law, they will cease automatically as soon as the flow of money from the country lowers prices to about the level that prevails elsewhere; while an inflow will not continue after it has raised prices enough to make the purchasing power of gold no higher than it is in other places. Every nation that does not meddle with inferior substitutes must receive from its mines or its trade enough gold to enable it to transact its business at a general level of prices substantially similar to that which rules in the rest of the world; while more than this amount it cannot permanently retain.

Conclusion.

FOR SUPPLEMENTARY STUDY

General: HADLEY, Economics, 180–207, 232–241; NICHOLSON, Political Economy, II, 88–124, 131–139; SEAGER, Introduction to Economics, 302–310.

Special: JEVONS, Money and the Mechanism of Exchange, 3–85, 187–191; KINLEY, Money; WHITE, Money and Banking, 41–59, 217–255.

CHAPTER VIII

PROBLEMS OF MONEY AND BANKING

I. Government Paper Money

§ 95. Many countries have tried disastrous experiments with government paper money, which consists of circulating notes issued by governmental authority. These notes usually bear on their face the promise of the government to redeem them, generally at no specified time; they are receivable for taxes and other dues at the public treasury; and commonly are declared a legal tender for all private debts. While frequently a paper currency has been received willingly enough when first issued, the coercion of a legal tender law has usually been employed to maintain the credit of such currency; and the longer the issues continue, the more the element of forced circulation comes to the front.

Government paper.

§ 96. The advocates of government paper have usually argued that paper money is cheaper than specie since, by its use, a country saves the expense of procuring and maintaining a large stock of the precious metals. This is undoubtedly true, but it is a matter of no consequence if experience has shown that paper currency is an unsafe medium of exchange. Then, too, in any case, specie must be employed in foreign exchanges since one nation will not accept paper issued in another.

Arguments in its favor: (*a*) Cheapness.

But it is claimed that a paper currency can be employed with perfect safety and convenience, provided that measures are adopted to prevent its being issued in excess of the needs of trade. This, again, is entirely true; and it would be a highly important consideration if it were possible to devise some perfectly safe method of restricting the issue of paper. If a community is using $1,000,000 of specie in transacting its exchanges, the government might issue about $1,000,000 of paper without inflating prices and causing depreciation, provided that this was done in such a way as to assure business men that the new currency would not be increased beyond that limit. But such assurance it is impossible to give. Advocates of paper money have exhausted their ingenuity in devising automatic methods of limiting the issue; but most of these have been tried at some time or other, and found wanting. Even if a satisfactory restriction could be invented, there would be no guarantee that the legislature would not repeal or amend the law if it ever desired to increase the volume of the currency.

(*b*) **Safety.**

The least intelligent argument in favor of a paper medium is that any kind of money depends for its existence solely on the action of government in issuing it and making it a legal tender. Therefore, it is said, the government can make one thing a dollar as well as another, and should select that medium which is cheapest. Our study of the development of metallic money has already demonstrated the falsity of the belief that it depends for its value solely upon the fiat of any government. Undoubtedly the fact that gold is employed as money increases its value by opening a new

(*c*) **Fiatism.**

use for that metal, but it was a useful commodity before it ever became a medium of exchange; moreover, it was by the action of individuals, not that of governments, that gold was gradually preferred to other commodities for monetary purposes. Governments may declare that a piece of paper shall circulate as a dollar, and may force such money upon creditors who are bound by past contracts; but the new unit of value will be a *paper* dollar after all, not a *gold* dollar. Whether the paper currency will be as good as the gold depends on the amount of it which the government tries to place in circulation.

§ 97. Although we have admitted that paper might answer the purposes of money in domestic exchange, provided that its supply is held within proper bounds, the concession weakens in no way the case against government issues; for the chances are that a limitation cannot be maintained. In the first place, if the currency is emitted in order to defray public expenses, — and this is the way in which issues generally begin, — the real or supposed needs of the treasury are likely to lead to repeated emissions. It is far easier to set a printing press at work than to levy taxes for the support of a government, and this consideration will weigh heavily with a legislature anxious to please its constituents. Then, too, in time of war public expenditures are almost certain to exceed estimates and to furnish plausible excuses for additional issues of paper. Our Continental Congress began by emitting $3,000,000 of bills of credit, and finally placed $241,000,000 in circulation. In time of peace it may be proposed to issue paper in order to construct useful public works, as

The case against government paper: (*a*) Danger of overissue.

roads; in fact the advocates of such money never lack reasons for setting the printing presses at work.

(*b*) Demand of debtor classes.

In a popular government a second factor operates with unpleasant force and frequency in favor of enlarging a paper currency. In all countries there are large numbers of men who have borrowed money, and will be materially benefited by any measure that lowers the value of the medium in which repayment must be made. This is particularly true of the United States, since in all the newly settled districts land is purchased, buildings are erected, and extensive improvements undertaken by means of money borrowed in the older and wealthier states. It has happened repeatedly that legislative bodies have been controlled by the debtor classes who have clamored for relief from the pressure of their debts. In national politics the same influences have given rise to demands for "more money" with which to pay debts, and in this way the national credit has been impaired and the stability of our monetary system threatened. From 1690 down to recent times, our country has been trying repeated experiments with cheap money, which, in almost every generation, have caused as much financial loss as a destructive war. Experience should incline us to extreme skepticism concerning the efficacy of any plan for limiting the issue of cheap paper.

Inflation in the United States.

§ 98. Whenever government issues are employed, the paper begins to displace specie, although gold will not wholly disappear until there is enough of the cheaper medium to take its place. When this point has been reached, further issues will cause a rise of prices, *i.e.*, a paper dollar will begin to com-

mand fewer commodities; while, the purchasing power of specie remaining unchanged, a difference will appear between the value of paper and that of gold.[1] The premium on gold will increase so long as the inflation continues; and prices will continue to rise until they finally reach enormous figures. Since the paper currency costs practically nothing, it may be issued, despite the depreciation, until, as in our War for Independence, a bushel of money will hardly purchase a suit of clothes. When this point is reached, the currency becomes practically worthless and inflation will stop; but this is the only limit to the depreciation. Obviously, debtors can extinguish a large number of debts with very little trouble under such conditions as have been described. By 1779 and 1780 our Continental issues had rendered thousands of people penniless, and had almost destroyed the last vestige of faith between man and man. "Old debts were paid when the paper money was more than seventy for one. Brothers defrauded brothers, children parents, and parents children. Widows, orphans, and others were paid, for money lent in specie, with depreciated paper, which they were compelled to receive."

The greenbacks.

And yet this carnival of fraud took place in spite of the fact that the various colonies had, between 1690 and 1764, tried many disastrous experiments with paper money. The bitter lessons taught by the Continental currency were sufficient to make all honest men abhor the very name of bills of credit; but such

[1] This is called a premium on gold. During our Civil War the premium on gold rose at one time to 185. This meant that $285 in paper was needed to purchase $100 in gold.

memories had died out when, in 1862, our national government issued $150,000,000 of greenbacks, which were soon increased to $450,000,000. This time the fortunate turn of military operations, rather than any wisdom on the part of Congress, confined the issues to a volume that was not large enough to cause such enormous depreciation as occurred during the Revolution. Yet in 1864 the greenbacks were worth, on the average, less than 50 per cent of their nominal value, so that the country suffered from the evils of a depreciated currency. In 1879 the government began to redeem the notes in coin, having accumulated a reserve of $133,000,000 of specie; and since then greenbacks have been instantly convertible into gold at the demand of the holder. Unfortunately, however, an unwise law passed in 1878 prevents the treasury from destroying a note after it has been redeemed, so that, by being reissued in any payments that the government makes, the greenbacks continue to circulate.[1]

§ 99. The present law, enacted in 1900, provides that a gold reserve of $150,000,000 shall be maintained in order to insure prompt redemption of the greenbacks; but it does not require them to be destroyed when drawn into the treasury in this manner. On the contrary, it prescribes a method by which they may be reissued, with the result that the greenbacks are still looked upon as a part of our currency system. From 1890 to 1894 demands for the redemption of enor-

Our present position.

[1] As a result of the law of 1878, the greenbacks left in circulation amount to $346,681,000. Since 1879 the government has redeemed in gold about one and a half times this amount of the notes, without reducing the quantity outstanding.

mous quantities of the greenbacks forced the government into dire straits; but various events have improved the situation so that there is little reason to apprehend serious danger in times of peace. The objection to them now is chiefly that they would serve as a precedent for new issues in case the United States should ever be involved in a serious war. It would be far better to have the greenbacks retired by some gradual method, in order that we may not countenance even the limited employment of such a dangerous agency as government paper money.

II. Banks as Institutions of Credit

§ 100. It is now in order to study with some care the part played by banks in facilitating the commerce of the world. After considering the various functions exercised by the banker, we shall examine briefly the manner in which this important business is organized in the United States. A bank has been defined tersely as "a manufactory of credit and a machine of exchange." In fulfilling its functions it endeavors, first of all, to establish its credit upon such a sound basis as to attract deposits of the surplus cash of the community which individuals do not care to carry in their pockets and business concerns wish to place elsewhere than in the money drawer. The large corporations of modern times have to keep millions of dollars in bank in order to insure prompt payment of running expenses, while even the proprietor of a small store prefers to deposit in a bank all of each day's receipts that are not needed in "making change." Competition between banks frequently leads to the offer of interest, generally at the rate of two per cent, upon de-

The deposit function.

posits of considerable size; but even when interest is not paid, the convenience of the check system is sufficient to attract a large body of depositors.

The function of discount.

§ 101. Over three hundred years ago, bankers found that not more than a certain proportion of their deposits was ever called for at any one time; and they perceived that it would be perfectly safe to lend at interest a considerable part of the money intrusted to their keeping. To this depositors would not object, provided that a sufficient reserve of cash was kept on hand to meet all their demands from day to day; because, by investing the funds, bankers could afford to receive deposits without making any charge for keeping them in a place of safety. In this manner banks now gather up the surplus cash of a community, and lend it out to persons who desire to borrow. Usually the borrowers are men who are engaged in successful business enterprises, and who desire to obtain capital with which to extend them. They offer to the banker their notes of hand, secured by responsible indorsers or by the deposit of collateral;[1] or else they present bills of exchange representing commercial transactions from which the returns are not yet available.[2] Such notes and bills are bought by the banker at a stipulated rate of discount, and thus become his property. By studying their customers carefully and watching the course of business, banks can make commercial paper an extremely safe sort of investment.

[1] Stocks and bonds of corporations are the usual collateral, the banker accepting them as security for a loan to the amount of from 60 to 90 per cent of their market quotations, according to the stability of their value.

[2] Thus a merchant who sells goods upon thirty days' credit can draw upon his customer and discount the bill at his bank.

§ 102. Deposit and discount are the essential functions that an institution must exercise in order to be a bank, but other functions may be added. Of these, the one that has received the most attention is that of issuing circulating notes payable on demand. Since bank notes circulate readily from hand to hand, they are of considerable use to the business of a community in which few persons keep deposits at a bank and use checks in making payments; in large cities, however, the check is the more convenient medium of exchange. In all countries it has been found necessary to regulate by law the issue of circulating notes by banking institutions.

The issue of notes.

§ 103. The operations of a bank will be most easily described by means of a simple illustration. Suppose that a banking corporation begins business with a capital of $50,000, and that it immediately receives deposits to the amount of $100,000. The capital, it should be observed, serves as a guarantee for the safety of the depositors' money; for if bad investments are made, resulting in a loss, the creditors of a company can lose nothing until the entire capital is wiped out. At this stage of its operations, the balance sheet of the bank would stand as follows: —

Banking operations illustrated.

LIABILITIES		RESOURCES	
Capital stock . . .	$ 50,000	Office fixtures . . .	$ 5,000[1]
Deposits	100,000	Cash	145,000
	$150,000		$150,000

We will now suppose that the company lends to various persons $100,000 for ninety days at six per cent interest.

[1] We will assume that the company rents its offices, and invests $5000 in furniture, fixtures, and supplies.

These borrowers have accounts at the bank, and wish to have the funds which they borrow available for withdrawal by the usual method — by check. Accordingly the company will deduct $1500 for interest,[1] and credit the borrowers with deposits to the amount of $98,500. When this is done, the balance sheet of the bank will stand as follows: —

LIABILITIES		RESOURCES	
Capital	$ 50,000	Fixtures	$ 5,000
Depositors	198,500	Cash	145,000
Profits[2]	1,500	Loans and discounts .	100,000
	$250,000		$250,000

By this transaction, it will be observed, the bank has increased its liabilities to depositors by $98,500; as an offset, it now owns $100,000 of promissory notes or bills of exchange, classed as loans and discounts, which at the end of three months will not only cancel such obligations, but also leave a profit of $1500. Whenever loans are made, the effect is to increase a bank's deposits, since most of the borrowers will be depositors and will desire to draw out their money more or less gradually by check. Deposits originating in this way are precisely like the $100,000 of liabilities due to persons who deposited cash in the bank, except for the fact that they are obtained by giving promissory notes instead of turning over cash. Let us now suppose that depositors draw checks to the amount of $50,000 in order to effect various payments. After the

[1] Except with call loans, which are payable on demand, or call, banks regularly deduct interest in advance.

[2] The profits must be accounted for until they are distributed to stockholders.

checks have been paid, the accounts of the bank will show the following changes: —

LIABILITIES		RESOURCES	
Capital	$ 50,000	Fixtures	$ 5,000
Deposits	148,500	Cash	95,000
Profits	1,500	Loans and discounts .	100,000
	$200,000		$200,000

Banking operations (*continued*).

The bank now holds $95,000 of cash against $148,500 of deposits, a reserve equal to nearly sixty-four per cent of these demand liabilities. Experience has shown that, under ordinary conditions, a reserve of from fifteen to twenty-five per cent is ample to provide for all demands that depositors will make at any one time. Accordingly the bank will endeavor to enlarge its loans, since the liabilities can be safely increased; while the profits, of course, depend upon the amount of such business that can be done. It therefore lends $100,000 upon the same terms as before, its balance sheet then standing as follows: —

LIABILITIES		RESOURCES	
Capital	$ 50,000	Fixtures	$ 5,000
Deposits	247,000	Cash	95,000
Profits	3,000	Loans and discounts .	200,000
	$300,000		$300,000

The cash reserve being still nearly forty per cent of its liabilities, the bank invests $10,000 in the purchase of various securities, the stocks or bonds of some prosperous corporation. If, now, shortly after this, depositors withdraw $40,000, the condition of the institution will be as follows: —

LIABILITIES		RESOURCES	
Capital	$ 50,000	Fixtures	$ 5,000
Deposits	207,000	Cash	45,000
Profits	3,000	Securities	10,000
		Loans and discounts	200,000
	$260,000		$260,000

The cash reserve is now less than twenty-five per cent of the deposits; but $10,000 can be added to it upon short notice by merely selling the securities which the bank holds.

Banking operations (*continued*).

It now remains to study one other operation, the issue of notes. Let us assume that the bank is allowed to issue circulating notes with perfect freedom, as no bank in the United States has been permitted to do for more than forty years; and assume, also, that the occasion for the issue is the demand of the depositors for $40,000 of ready money. If the persons who present the checks drawn by the depositors are willing to accept $40,000 of bank notes in payment of their claims against the bank, then the balance sheet will stand: —

LIABILITIES		RESOURCES	
Capital	$ 50,000	Fixtures	$ 5,000
Deposits	167,000	Cash	45,000
Notes	40,000	Securities	10,000
Profits	3,000	Loans and discounts	200,000
	$260,000		$260,000

Obviously this transaction has not increased the aggregate demand liabilities of the bank, but has merely substituted a liability of $40,000 to noteholders for one of $40,000 to depositors. It has, however, had one very important result. If the checks drawn by depositors had

been paid in cash, the specie held by the bank would have been drawn down to $5000, a dangerously low point. The bank could have increased its cash by selling its $10,000 of securities, but even this would have given a reserve of less than ten per cent of the $167,000 due to depositors. Under such conditions the institution could not have loaned any more money to its customary borrowers and would have had to curtail its operations until the gradual maturing of some of the $200,000 of discounted paper had increased its cash to safe proportions. As it is, however, by issuing notes the cash reserve is kept unchanged; and the bank will not need to curtail its loans.

§ 104. In the United States only three banks were in existence when the Constitution went into effect in 1789; but soon after that the various states began to grant charters to numerous banking companies, and these institutions multiplied at a rapid rate. Many of the early banks were conducted with the greatest recklessness and dishonesty, and their creditors suffered enormous losses. In 1814, 1837, and 1857 there occurred general suspensions of specie payments by most of the banks in the country. Since deposit banking was less developed than it is to-day, the banks employed their credit by issuing huge quantities of notes, — frequently without any intention of redeeming them. Notes often circulated long after banks had gone out of existence; and every man who did not wish to lose money was obliged to consult bank-note detectors in order to ascertain whether the bills offered him were issued by institutions that would redeem their notes on demand. In the course of time some of the older and more conservative states adopted stringent

State banking in the United States.

laws to check these abuses, and gradually established sound systems of banking. Yet in 1860 there were practically no convertible bank notes in the Mississippi Valley north of Louisiana, while the notes of dead or doubtful banks were hawked about at a discount varying from ten to ninety per cent.

§ 105. The country was wedded, however, to its system of state banks; and our national banking system would not have been established when it was if it had not been for conditions created by the Civil War. Into these we need not enter; suffice it to say that in 1863 and 1864 Congress passed laws under which our national banks were established. At the present time the principal provisions of the federal laws are as follows:

The national banking system.

1. A Comptroller of the Currency is placed in charge of the administration of the banking laws. Each bank is required to report its condition to him five times annually, and examiners are appointed to examine the affairs of each institution.

2. Each national bank must have a capital of not less than $25,000, and stockholders are liable for the debts of the bank to double the par value of their stock.

3. A certain proportion of the capital of each bank must be invested in registered interest-bearing bonds of the United States deposited in the national Treasury.

4. On the security of these bonds, a bank may issue notes to an amount not exceeding the par value of the bonds; but the Comptroller may require additional security if the bonds ever fall below par.

5. These notes are not legal tender, but are receivable

for taxes, except for duties on imports, and are receivable for payments to any national bank. Each bank must redeem its notes on demand in legal-tender money.

6. Banks must deposit in the Treasury a fund equal to five per cent of their outstanding circulation. Thus the United States undertakes to redeem notes presented at the Treasury; and would do so even if the fund proved insufficient, having adequate security in the bonds and in a first lien upon the assets of a bank. Consequently the notes are practically guaranteed by the government.

7. Each bank must keep a reserve of lawful money. In smaller cities a reserve of fifteen per cent of the deposits is required. In the "reserve cities" a reserve of twenty-five per cent is necessary. Banks in smaller cities may deposit sixty per cent of their reserves with banks in reserve cities. Banks of reserve cities may deposit fifty per cent of their reserves with banks in "central reserve cities," that is, in New York, Chicago, and St. Louis.

8. Banks are taxed one half of one per cent on their circulation. The notes formerly issued by state banks have been put out of existence by a tax of ten per cent, which made such issues unprofitable.

Under these laws an admirably sound banking system has been developed, and the losses and inconveniences suffered prior to 1860 have become a thing of the past. In recent years state banking institutions have increased in numbers, although they are not allowed to issue notes; and trust companies, which were established originally for the purpose of acting as trustees of estates and executing similar trusts, have entered the field of deposit and discount banking. Yet the national

The present situation.

banks retain a position of preponderance, and will probably continue to do so, even though some of them chafe under the restrictions which the law imposes. If any change is affected in the system, it is likely to be in the conditions under which notes are issued, but a discussion of this matter would carry us too far afield.

III. Bimetallism

§ 106. Prior to the nineteenth century many countries had permitted the free coinage of both gold and silver at ratios varying from about fifteen to fifteen and a half grains of silver for each grain of gold contained in their coins. The result was that, as often as the market value of one metal or the other changed, Gresham's law came into operation, and the coins that were overvalued drove the others out of circulation.

National bimetallism.

In the United States, for instance, our first coinage system, established in 1792, provided for the free coinage of a silver dollar containing 371.25 grains of fine metal and a gold eagle with fine contents of 247.5 grains. This established a proportionate valuation of fifteen to one,[1] which was approximately the correct market ratio at the time the law was passed; but very soon silver fell in value, so that 15.61 grains were required in the bullion market to purchase one grain of gold. The result was that gold could not circulate by the side of silver coins valued at the ratio established in 1792, and the country was thrown on a silver basis. In 1834 and 1837

The experience of the United States.

[1] Since the eagle weighed 247.5 grains, the law rated 24.75 grains of fine gold as equivalent to 371.25 grains of silver. This gives the ratio of fifteen to one.

Congress cut down the contents of the eagle to 232.2 grains in order to bring gold back into circulation. This action established a ratio of 15.988 to 1 — known ever since as sixteen to one — by which silver was slightly undervalued, and gold was enabled gradually to displace it. The Californian discoveries had the effect of lowering still farther the value of gold; so that, in 1853, the silver contained in a dollar was worth $1.04, and the coin had gone wholly out of use. Thus our currency was placed upon a gold basis, and remained there until the issue of greenbacks in 1862 introduced an era of depreciated paper money.

§ 107. In 1816 England had debased her silver coins, made them legal tender only for small payments, and established gold as the sole standard of value. This movement toward gold monometallism was greatly accelerated when, in 1871 and 1873, the newly formed German Empire established a national gold coinage, and withdrew most of the silver coins that had formerly circulated in the various German states. At about the same time the United States, with a view to the future resumption of specie payments, began to revise its coinage laws; and in 1873 finally dropped from its list of authorized coins the obsolete silver dollar which was still worth more than the gold dollar. This action put an end to the free coinage of silver, and by it that metal is said to have been "demonetized." The law of 1873 was passed for the purpose, repeatedly expressed in Congress, of making gold the sole standard of value when specie payments should be resumed; yet it has been charged, wrongly, that the measure was enacted "secretly" or "inadvert-

Gold monometallism.

ently" or even "fraudulently." The fact is that no one was interested in the fate of a silver dollar that was worth $1.02 in gold, and that no interest would have been manifested in it subsequently if the depreciation of silver had not made it cheaper than our standard gold coins.

The Latin Monetary Union.

§ 108. Meanwhile France, Italy, and some smaller countries had organized the Latin Monetary Union, and established the free coinage of both silver and gold at a ratio of 15.5 to 1. The large production of gold in California and Australia had long kept the value of that metal so low that it had flowed in large quantities to the French mints; but after 1870 the output of silver was enormously increased, and its value in turn declined. The result was that silver began to flow in excessive quantities to the mints of the Latin Union, so that it became necessary to restrict the coinage of that metal; in 1876, indeed, when the ratio had become 17.75 to 1, the French mints were closed to silver.

Supremacy of the gold standard.

§ 109. Since 1876 all changes in the monetary situation have tended toward the general adoption of a single gold standard and the relegation of silver to a place as subsidiary currency. Austria and Russia have endeavored to free themselves from depreciated paper currencies, and to place their systems on a gold basis; and the coinage of silver has been restricted in many countries. The peoples of Asia and South America had from time immemorial employed silver as their principal money metal, but in 1893 India was compelled to discontinue free coinage of the silver rupee. After that the movement away from silver extended to Japan and various other countries. The result has been that

the opening of the twentieth century finds silver, which prior to the nineteenth century had been the more common medium of exchange, relegated to the position of an inferior currency, subsidiary to gold.

§ 110. This change has not come about without protest, especially in the United States. In 1876, with the resumption of specie payments approaching at the end of 1878, it was seen that the silver dollar, then worth but ninety cents, would be able to displace gold if the famous law of 1873 had not stricken it from the list of authorized coins. Immediately there began a demand for the free coinage of silver, and the "silver issue" made its appearance in national politics. In 1878 the Bland-Allison Act was passed, which required the government to purchase a certain quantity of silver at the market price each year, and coin it into dollars containing 371.25 grains of fine metal. Under this act, $378,166,723 of silver had been injected into circulation by 1890, when Congress passed the Sherman Act, providing for increased purchases of silver against which legal-tender notes were issued.[1] The act of 1878 had effected a gradual substitution of silver for gold, and the increased inflation of cheap money authorized by the Sherman Act led to a more rapid exportation of the yellow metal. There is no question that a few more years would have placed the country upon the silver basis, by causing the complete displacement of gold. In 1893, however, a disastrous panic intervened, which was thought to be due in some

The silver movement in the United States.

[1] Of these notes about $156,000,000 were issued. They were called Sherman notes, or notes of 1890. Only about $19,243,000 remained in circulation at the end of 1903, the rest having been retired. The silver purchased by the notes has been coined into standard dollars.

degree to the operation of the law of 1890; and, after a protracted struggle in Congress, the Sherman Act was repealed. This action fanned the agitation into a fiercer blaze than ever before, and the presidential election of 1896 turned almost solely upon the issue of establishing the free and unlimited coinage of the silver dollar, then worth only fifty-two cents. The defeat of the silver party finally disposed of this troublesome question which had vexed the country for twenty years. There is no reason to doubt that if free coinage of silver had been permitted, the operation of Gresham's law would have placed the nation on a silver basis, and would have decreased ultimately by almost fifty per cent the purchasing power of the medium in which debts are paid.

§ 111. For a single nation to attempt free coinage of silver at any such ratio as sixteen to one is now generally conceded to be the height of folly. But for thirty or forty years international bimetallism — another and very different proposition — has occasioned much discussion. The displacement of silver as standard money and the increased use of gold assumed large proportions at the very time when the world's gold production began to show signs of decrease. Simultaneously there commenced a downward movement of prices, by which the purchasing power of the gold dollar steadily rose from 1873 to 1897. This, naturally enough, occasioned much discontent and lent great interest to schemes for the establishment of international bimetallism, by which, it was hoped, an increased use of silver would be made possible and the fall of prices would be checked.

International bimetallism.

§ 112. Bimetallists urged that the continual fall of

prices increased the burden of all debts growing out of contracts that ran for a term of years, and their contention has never been successfully refuted. If it is unjust to permit debtors to pay creditors in money of inferior purchasing power, it must be equally so to require them to pay their debts in a medium of which the purchasing power has increased; debased currency is no more iniquitous than a currency that steadily appreciates. Moreover, it was argued that falling prices have an injurious effect upon industry, since they steadily diminish the amount of money that producers can get in exchange for their commodities. Bimetallists contended that the fall of prices, depressing enterprise and injuring debtors, was due to the fact that silver had been partially "demonetized," and gold had been made the sole standard of value; they urged, therefore, that the leading nations should enter into an agreement to permit both gold and silver to be employed as money at some proper ratio.

Arguments in its favor.

Debate between the bimetallists and the advocates of monometallism turned upon the questions of the evils caused by falling prices, the cause of the fall, and the efficacy and practicability of the proposed remedy. The arguments advanced by some monometallists to prove that falling prices do not wrong creditors and are a good thing for business do not present an impressive appearance.[1] Turning to the causes for the fall of prices after 1873, it seems tolerably clear that the monometallists were not successful in their contention that an increased demand for gold money had nothing to do with

The fall of prices.

[1] For instance, if the falling prices prior to 1897 were a good thing for business, have the rising prices since that date been a bad thing?

the change in the price level. Doubtless bimetallists exaggerated the influence of the changes in the relative demands for gold and silver for monetary purposes; yet it seems reasonable to suppose that, as one nation after another began to use gold in preference to silver, the growing demand for the former metal and the narrowing demand for the latter tended to raise the value of the one and to depress that of the other. The fall in silver was, of course, greatly accelerated by the very large increase in the production of that metal after 1870.

Practicability of a bimetallic standard.

The serious issue between the two parties to the debate was the efficacy and practicability of the remedy proposed by the bimetallists. The monometallists argued that all experience showed that the market ratio between gold and silver had always fluctuated; and that this fact demonstrated that it always would fluctuate, with the result that, at the established legal ratio, one metal would always be cheaper than the other and would enjoy exclusive circulation. The bimetallist replied that if all the principal nations entered the agreement, gold, if it should happen temporarily to be undervalued, would not be driven entirely out of use by the cheaper silver coins. They argued that Gresham's law cannot operate if there is no country where the dearer metal can go the moment that it begins to be displaced by the cheaper. At the present time something more than $5,000,000,000 of gold circulates in the principal lands of the earth; and the bimetallists believed that such a quantity of metal could not be driven out of use as money [1] and

[1] It is at this point that international bimetallism differs from the proposal to adopt free coinage of silver in a single country. Under the latter

thrown into the melting pot without lowering the value of gold to a point that would reëstablish its parity with silver at the legal ratio. Moreover, it was said that, as gold should begin to leave the channels of circulation, there would be a proportionate increase in the demand for silver money, by which the value of that metal would be given an upward turn. On this point there may be room for considerable difference of opinion, but the belief of the writer has always been that, on the assumption that a world-wide agreement is attained, the bimetallist had the best of the controversy.

§ 113. The strength of the argument of the monometallists lay in their contention that a bimetallic agreement, however desirable it might be, could not be reached by all the leading nations; and, if reached, would not be certain of continued maintenance. As a matter of fact repeated conferences were held by various countries, including the United States, which has constantly tried to "do something" for silver; but there has never been any prospect that England, and perhaps Germany, would abandon the gold standard. The vast commerce of England has been built up since 1816 upon the basis of the stability of the gold sovereign, and English merchants are not willing to take any chances with a system dependent on international agreement. Germany adopted the gold standard partly for political reasons; and although there has been a strong bimetallist movement in that country, it has never seemed probable that the government would accept an international agreement

The strength of opposing arguments.

condition, gold could be exported to many other countries to be used as money.

for the free coinage of silver. This, then, was the rock on which the projects of the bimetallists always shattered.

Conclusion.

§ 114. If the gold production had remained as small as it was so late as 1890, and prices had continued to fall, it is probable that international bimetallism would still be a topic of vital interest. But the enormous increase in the output of gold, which at length caused an upward movement of prices, has produced the very condition for which the bimetallists contended, — a larger volume of money that would check the decline of prices. It has also deprived their schemes of all present importance, and made bimetallism a topic of purely academic interest. So long as the world's gold output continues to be as large as $300,000,000 annually, the gold standard will not be replaced by a bimetallic agreement.

FOR SUPPLEMENTARY STUDY

General: HADLEY, Economics, 207–231, 241–263; NICHOLSON, Political Economy, II, 125–130, 140–205; SEAGER, Introduction to Economics, 310–360.

Special: BULLOCK, Essays on the Monetary History of the United States, 29–121; DUNBAR, Theory and History of Banking, 1–94, 158–190; JEVONS, Money and the Mechanism of Exchange, 192–284; KINLEY, Money; WHITE, Money and Banking, 60–102, 130–163, 174–216, 372–384, 417–431.

CHAPTER IX

MONOPOLIES

I. Introduction

§ 115. Monopoly means *such control over the supply of a commodity as confers the power to fix the price.* It may be secured either by buying up, "cornering," the major part of the available stock, or by acquiring the exclusive or substantially exclusive power to produce the commodity. Control secured in the first manner can be only temporary, because efforts to "corner" the supply in order to raise prices merely tempt more capital into an industry and increase the output; if, however, control is attained in the second way, there may be a prospect of permanent success.

Monopoly defined.

An absolute mastery of supply, and hence of prices, seldom or never exists, since it is generally possible to procure substitutes for a monopolized commodity, and this will be done to an increasing extent as charges are raised. Soft coal or coke may be used instead of anthracite, cotton may be employed in place of wool, electricity may be utilized instead of illuminating oil, and many similar substitutions can be effected. This consideration is not a defence or justification of the action of the monopolizer who puts consumers to the trouble of

Absolute monopoly impossible.

devising substitutes, which are often inferior to the original article; but it does set an ultimate limit beyond which the power of a monopoly cannot extend.

Then, again, the monopolist is likely to be disturbed by the constant establishment of rival enterprises which are called into existence by the high prices that he maintains. Our most successful trusts have never produced more than eighty to ninety-five per cent of the products which they controlled; and the higher that prices are raised, the larger becomes the number of rival establishments. The fear, therefore, of possible competition may sometimes limit the power of a combination over the price of a monopolized commodity.

Difficulty of suppressing competition.

§ 116. Upon the facts that substitution is possible and competition is probable if prices are raised to exorbitant figures, the apologists for monopoly have based the claim that there are few or no monopolies in the United States. Monopoly, however, does not mean absolute control; it means merely the power to raise prices somewhat above the marginal cost of production, the point at which competitive prices are fixed. The employment of substitutes does not begin until prices are raised above the competitive level, and the fact that a few independent concerns furnish ten or twenty per cent of the product does not keep prices down to the marginal cost of production. For most practical purposes, control over seventy, eighty, or ninety per cent of the supply confers the power to raise prices, and answers all the objects of the monopolist. In fact, it is frequently advantageous to have the appearance of competition maintained, since this makes it easier to delude the public.

Denials of the existence of monopolies.

§ 117. If we leave out of account exceptional cases in which the possession of extremely rare artistic or business skill confers monopolistic power upon a person, we can divide monopolies into three classes. First in order we may place *legal* monopolies, which are dependent upon an exclusive grant from a government; they may be either private or public in character. In the one case the government grants an exclusive privilege to an individual or group of persons; in the other, it reserves to itself the sole power to conduct some enterprise. Private legal monopolies were secured in early times through the mere favor of the sovereign; but today, as with patents and copyrights, they are granted for a limited term of years for the purpose of encouraging invention and fostering letters. In some industries patents have become an important factor in developing and maintaining large monopolies. Public legal monopolies may be established in order to provide for the better administration of some important service, as the postal department; or may be created as the best method of taxing the people, as the tobacco monopoly in France. In the one case prices may be kept low in order to encourage the extensive use of the service; in the other, they will be made high enough to bring in the maximum profits. Sometimes, indeed, the two purposes are more or less mingled in the same enterprise, as in the Prussian railway service, which, although originally undertaken for other purposes, has become a source of large revenue.

Classes of monopolies: (1) Legal.

Second in order are natural monopolies, which arise on account of peculiar properties inherent in certain lines of business. Many natural agents of production are nar-

rowly limited in supply, and the limitation is frequently so strict that it is possible for a group of persons to acquire control of them. Practically all of the anthracite coal of the United States is found in a comparatively small area in Pennsylvania, and it has been possible for a group of railways, in defiance of express provisions of law, to acquire a monopoly of hard coal. So, too, petroleum fields, deposits of copper and iron ores, water powers, irrigation facilities, water fronts of large cities, and many other natural agents are so limited in extent as to fall into the control of a small number of persons or companies. Such a condition is very favorable for the growth of a monopoly, although this result may not appear in all cases.

(a) Natural monopolies.

A second group of natural monopolies originates from the fact that certain products or services can be consumed only in connection with an expensive distributing apparatus. Gas, water, and electricity can be supplied only to persons who have connected their houses or factories with the mains, pipes, or wires required for their distribution. Street or steam railways can reach their customers only by constructing tracks in certain localities, and the telegraph and telephone present the same conditions. In all these cases it is cheaper for one company to supply a given district than for two concerns to duplicate the distributing plants and compete for business. Accordingly, whenever competition is attempted, capital is wasted in needless duplication of pipes, tracks, or wires; and the managers of rival concerns perceive, sooner or later, that, even apart from the possibility of raising prices, more money can be made

Natural monopolies (*continued*).

by forming a combination and eliminating unnecessary expense for the distribution of the service. For this reason monopoly may be regarded as the condition that must ultimately prevail in such an industry.

The so-called capitalistic monopolies constitute a third class. They have been formed in many branches of manufacturing industry that do not seem to possess the characteristics attributed to natural monopolies; and it is alleged that they are due to the economies that result from the combination of competing enterprises. If this should turn out to be the case, it would seem that they must be considered just as natural as the monopolies in the gas, water, or electric-lighting industries; so that the distinction between our second and third classes would disappear. The belief of the writer, however, is that this is not the case, as will be set forth in a later part of this chapter.

(3) Capitalistic monopolies.

II. Monopoly Value

§ 118. Whenever competition prevails, it is in the interest of every producer to increase his output as long as the price remains high enough to yield him a profit; since, if he should curtail production, other concerns would extend their sales at his expense. The monopolist, however, possessing for the time being an effective control over the industry, is able to restrict the output and to raise the price of the commodity to such a point as proves to be most profitable. For this reason the value of a monopoly product will not be governed by the same principles that apply when competition exists. The general law of monopoly prices is that they

The determination of monopoly values.

will be adjusted in such a manner as to yield the monopolist the largest profits obtainable from the industry; or, in technical language, will be fixed at the point of highest net returns. In determining where this point is, the intelligent monopolist will take into account the following considerations: —

(1) As the price is raised above the former level established by competition, the demand will inevitably decline, and the monopolist must reduce his output. If he does not pursue this course, part of his goods will remain unsold at the price which he desires to maintain. With articles of voluntary consumption, the demand falls off very rapidly as the price is raised, so that the power of the monopolist is quickly limited by reason of the fact that exorbitant charges decrease the sales faster than they increase the profits on each article sold. With necessities, the power of the monopolist is greater; and prices can be raised very materially before the sales decline enough to make further increase unprofitable.

(2) Certain expenses of production increase or decrease nearly proportionately with corresponding changes in the product;[1] while others remain absolutely or approximately the same however large the output may be (§ 69).

(3) The maximum net revenue that may be obtained is determined by disregarding all the fixed expenses, and by studying with care (*a*) the quantity of the product which consumers will demand at various prices, and (*b*) the variable expenses chargeable to each unit of the supply.

[1] Sometimes the variable expenses will decrease as the output is enlarged, when considerable advantages attend production on a larger scale.

§ 119. The problem will be made clearer if we consider the assumed case of a street railway company which monopolizes the traffic of a small city. Suppose that the fixed expenses of such a company for interest on the bonded debt, salaries of principal officials, and other similar items amount to $40,000 annually; and assume that the variable expenses amount to 2 cents for each passenger carried. Then suppose that a fare of 10 cents will induce 600,000 persons to patronize the company in the course of the year, and that lower fares increase the traffic until a price of 3 cents attracts 4,000,000 passengers. The elements which the company will study in determining what fare to charge are shown in the following table:—

The law of monopoly value illustrated.

Fare	Passengers Carried	Total Earnings	Variable Expenses	Net Earnings	Fixed Expenses	Net Revenue
10	600,000	$60,000	$12,000	$48,000	$40,000	$8,000
8	800,000	64,000	16,000	48,000	40,000	8,000
6	1,400,000	84,000	28,000	56,000	40,000	16,000
5	2,000,000	100,000	40,000	60,000	40,000	20,000
4	2,500,000	100,000	50,000	50,000	40,000	10,000
3	4,000,000	120,000	80,000	40,000	40,000	

Under the conditions here represented it is evident that the total receipts of the company steadily increase until a fare of 3 cents is reached; and that, if the variable expenses did not affect the problem, the largest profits would be obtained by establishing this low charge. But when the variable expenses are taken into account, it is seen that 5 cents

The illustration further considered.

will be the most profitable fare; since from 10 cents down to 5 the traffic increases faster than the variable expenses; while below that point these expenses increase more rapidly than the traffic. It is obvious, too, that the fixed expenses never enter into the calculation. A fare that yields the largest net income above the variable expenses will also afford the largest amount of revenue that can be secured for meeting the fixed charges. If, in this case, the net earnings with a 5-cent fare had been insufficient to defray the fixed charges, the company would only have made the situation worse by adopting a different rate; as it is, our figures show that all expenses can be met, and that $20,000 will still remain available for dividends to the stockholders. A monopoly price, therefore, does not mean the price that the most necessitous consumer would conceivably pay, but one that yields the highest net returns; for, indeed, if the demand for a commodity is very elastic, it may happen that the monopolist cannot raise the price far above the point at which competition would have placed it.

III. Natural Monopolies

§ 120. It is now generally recognized that permanent competition cannot be expected in industries that exhibit the characteristics attributed to natural monopolies. When American cities first began to require extensive waterworks, lighting facilities, and means of transportation, it was generally supposed that the way to secure good service and low prices was to charter a number of competing companies. In this manner enormous amounts of capital were wasted,

Municipal monopolies.

while the anticipated competition always proved illusory. In many cases the rival companies were consolidated; and where this was prevented or considered inexpedient, they formed secret agreements to keep out of one another's territory and to maintain high charges. The growth of the cities has served merely to increase the gains of companies enjoying municipal franchises, and these profits have been concealed by issuing watered stock upon which moderate rates of dividend could be paid.[1]

§ 121. Even more serious have been the political evils which have flowed from these conditions. Municipal franchises are so profitable that the temptation to secure them, on terms unfavorable to the city, by corrupt means has been too strong to be resisted. Originally the franchises were bestowed without thought of their actual or prospective value; and it is only within a short time that we have awakened to the fact that corrupt boards of aldermen have been bartering away the birthright of all the people to powerful corporations that use the privileges accorded them for the purpose of exacting extortionate gains. Gradually the poison of bribery has worked itself into all parts of our municipal governments, and has extended to the state legislatures, which have the power to control local bodies. The notorious

Political corruption.

[1] A street railroad which costs $1,000,000 to build and can earn $150,000 a year must pay 15 per cent dividends in order to distribute the earnings among the stockholders. Now by issuing $2,000,000 of watered stock and increasing the capitalization to $3,000,000, the moderate rate of 5 per cent will distribute the earnings. The company will then deny that its earnings are exorbitant; and will oppose attempts to reduce fares, on the ground that if charges are reduced it will not be able to pay the very moderate rate of 5 per cent to the widows and orphans who have purchased its stock.

evils of American city governments are not due to ignorant foreign voters, or to the alliance of the police force with vice, to any such extent as they are attributable to the misdeeds of those who consider themselves respectable citizens and the leaders in financial or social circles; for back of the "boodle alderman" one always finds the respectable banker or the eminent financier. The piracy of municipal franchises, in fact, is the principal cause of the corruption and inefficiency that are so unfortunately characteristic of city governments at the present day.

§ 122. Happily our people are beginning to realize the nature and extent of these evils, and are seriously studying various remedies suggested for the unfortunate condition of affairs. Many writers have favored municipal ownership of all natural monopolies; and this proposition, which ten or fifteen years ago was considered rank socialism, has commanded an increasing amount of support. In behalf of the plan it is argued that, since monopoly is inevitable in these industries, our only choice lies between public and private monopoly, and that the former is far preferable to the latter. Private monopolies, it is contended, cannot be allowed to go uncontrolled; and the attempt to regulate them arrays powerful corporations against the public interest, with results that are disastrous to the virtue of city officials and state legislatures. Corruption and extortion, it is said, can be remedied only by having the accredited agents of all the people manage these enterprises with a single view to the interests of the public.

Municipal ownership.

But the problem hardly admits of such a simple solution. Monopoly, it must be conceded, is inevitable;

and our only alternatives are, admittedly, public ownership or private ownership with public control. But public ownership presents serious difficulties, chiefly that of securing efficient and honest management. At the present, from the federal postal establishment down to the small municipal printing office, public management is found to be frequently ineffective, and not infrequently dishonest. Laborers engaged on public works are likely to demand short hours and the highest pay, while working at a pace that must be exceeded by the citizen who hopes to pay his annual tax bill; governments must purchase materials and supplies from contractors, many of whom will stoop to such bribery as has been exposed in the postal service; and the result is that the cost of operation is often higher than it would be under a private corporation. Moreover, when a deficit appears in a public enterprise, it is likely to be viewed with extreme complacency by the large number of citizens who pay no taxes on real or personal property, but secure the service for less than cost. Evidently, public ownership, even if it is better than private, carries with it very grave difficulties which make it, at the best, nothing but the less of two evils.

Its difficulties.

Our cities have had the most experience with municipal waterworks, which are now more often public than private, especially in the larger centers of population. The results of public management have been better in this case than they would be in the lighting or transportation industries, since waterworks are simpler in operation and most of the methods and appliances have long since passed out of the

The lessons of experience.

experimental stage. We have had few experiments with municipal gas plants, and the teachings of experience at this point are somewhat conflicting. A larger number of cities have entered the electric-lighting industry, but the movement is too recent to permit one to form anything like a final conclusion. With street railways, public management is practically untried, although municipal ownership of subways which have been leased to private companies has been adopted in New York, Boston, and perhaps other cities. In all industries success or failure has depended on the character of the local governments; and, wherever the politicians have been allowed to rob the people, municipal ownership has proved anything but an unmixed blessing.

Conclusions.

§ 123. Between the alternatives of public ownership and private management under public control, it will be wise for the student to refrain from making any general decision; in fact, the only safe course is to decide each case that arises with reference to its particular circumstances. Municipal ownership of waterworks has, on the whole, justified itself by its results; public management of street railways at a time when all the methods and appliances have not yet passed out of the experimental stage would be far more hazardous.[1] In all cases the probability of securing honest and efficient management is the factor to be given the chief weight. A reform of the civil service by which appointments to public office can be separated from poli-

[1] Since 1890 the method of propelling cars has been revolutionized by electricity, and one form of electrical equipment after another has come into use.

tics and made to depend upon fitness is an absolutely indispensable condition for the further extension of municipal enterprise; and in any case the ugly problem of bribery must be grappled with, since this will not be eliminated by the adoption of public management. The example of Chicago seems to prove that it is possible for the people of a great city to secure a city council which is beyond suspicion, and other communities must cope with the same situation which Chicago has met with apparent success. It may finally appear that the abolition of this insidious form of corruption will aid greatly in controlling private corporations that operate under municipal franchises; and may, therefore, make unnecessary and undesirable the further extension of public ownership.

§ 124. Besides the various municipal services just mentioned, the railroads, the telegraph, and the telephone industries possess the characteristics of natural monopolies. The railroad problem is so extremely important that it will require treatment in a separate chapter; the telegraph and telephone industries cannot receive adequate attention in the space at our command. The events of 1902 have brought into prominence the fact that the country's supply of anthracite coal has fallen into the hands of a few railroads which have acquired a substantial monopoly of the mines. It is probable that from one dollar to a dollar and fifty cents is added by the coal monopoly to the price of every ton of anthracite coal consumed in the United States, and some of the magnates in charge of the roads have been so destitute of humor as to inform the country that this condition of things has been expressly ordained by divine

Other natural monopolies.

Providence. It is possible that the extortion now practiced will some day be remedied by vigorous treatment of the railway problem, but at present we find in the anthracite coal industry a striking illustration of the importance that natural monopolies sometimes assume.

IV. Capitalistic Monopolies

§ 125. Not long after the Civil War various agreements were formed in the distilling and some other industries, by which producers undertook to limit the output and to raise prices. These arrangements, however, were seldom of long duration, since one or more of the parties to a compact would usually break his promise and increase his sales at the expense of those who kept their word. Similar efforts to harmonize conflicting interests and establish monopoly prices have continued to the present day; but generally mutual jealousy and suspicion have prevented them from being very effective, even when they have been reënforced by the establishment of common selling agencies. Yet a "friendly agreement" between a few large beef packers in Chicago and some other cities has sufficed to build up a partial monopoly of the dressed beef industry.

Agreements between producers.

§ 126. The weakness of the "gentlemen's agreement" led to the establishment of a more formal organization known as a pool, by which is meant an agreement to divide the territory served, or the business obtained, or the earnings of the industry. Pools have been most extensively used by the railways of the country, but such associations existed in the steel rail industry prior to 1897, and have been renewed in recent

The pool.

years in nearly all branches of the steel trade. They often enable producers to raise prices for a considerable period of time,[1] but may be broken up on account of the same weakness that is so fatal to the informal agreement. The courts long ago decided that pooling contracts, since they have a tendency to restrain trade and are contrary to public policy, cannot be legally enforced; and it is very difficult to devise a system of fines or other penalties that will prevent some members from breaking a pooling agreement when a strong inducement is offered for doing so.

§ 127. A more effective device was invented in 1882 when the Standard Oil Trust was established. In the trust a large number of firms and corporations which had already been brought under a single control were united under a board of trustees. The stockholders in the various companies surrendered their stock to the trustees, and received trust certificates for the amounts at which their property was valued. This arrangement placed effective control of the different enterprises in the hands of a single board; and within a few years, the plan was adopted by combinations in several other industries. By 1887 this movement toward the formation of trusts reached such proportions as to create considerable alarm at the spread of monopoly, and to call forth a large number of repressive statutes. During the next five years many states enacted anti-trust laws; and,

The trust.

[1] In the spring of 1896 a pool raised the price of steel rails by degrees from $17 to $25 per ton at Pittsburg; subsequently the price was advanced to $29. In 1897, when the pool was dissolved, the price fell to $15, and even lower. The United States government had been charged $563 per ton for armor plate; but after the dissolution of the pool, one of the steel companies submitted an offer at a price of $240.

in 1890, Congress passed what is known as the Sherman Act, which prohibits all contracts or combinations in restraint of interstate commerce. Little was accomplished under most of these statutes, but the courts at length decided that the trust was an unlawful form of organization.[1] Accordingly the trusts were ostentatiously dissolved, and forthwith reorganized in another form; so that they still exist in fact, though not in name.

The present form of capitalistic monopolies.

§ 128. The so-called trusts of the present day are merely large corporations which have issued their securities in order to purchase the companies which were combined under one organization.[2] When the attempt was made, under the Sherman Act, to attack their legality, the Supreme Court decided that interstate commerce, to which alone the power of Congress extends, means the transportation and sale of products, not the process of manufacture, which was declared to be anterior to commerce and clearly distinguishable from it. The result has been that the federal government has been unable to attack combinations of manufacturing companies, although the Sherman Act has been applied in a more or less spectacular fashion

[1] This was decided in New York on the ground that when a corporation surrenders its stock to trustees, it abdicates control of its business, an action which is *ultra vires*, that is, beyond the powers bestowed upon it by its charter.

[2] The Standard Oil Company and the American Sugar Refining Company are merely large corporations formed in New Jersey to take over the properties controlled by the trusts. The United States Steel Corporation is a holding company which owns practically all the shares of a number of constituent companies, such as the Carnegie Company, the American Steel and Wire Company, and others, which were themselves known as trusts, having been formed from the union of smaller concerns.

to a combination of railways in the Northwest. The position of most of the corporations known as trusts is now generally regarded as perfectly lawful, although it is possible that some method of attacking their legality may be devised; the holding company, however, may yet prove a vulnerable device.

§ 129. Trusts have found numerous apologists or active advocates, who, for a decade or more, have argued that modern combinations are merely the latest and most efficient method of organizing capital, and the highest product of industrial evolution. The principal basis for such claims consists of certain economies which, it is alleged, can be realized by the combination of all the companies engaged in an industry. The savings attributed to the formation of trusts may be divided into two classes: those supposed to be effected in the process of production, and those realized in the marketing of products.

Arguments in favor of combinations.

Of the first class, the alleged economies are due to the advantages of production on a large scale. At this point the advocate of the trust usually contrasts small-scale production with a combination of all competing plants, and argues that decided superiority lies with the latter. But this is very wide of the mark, since the real question is whether the trust is superior to the very large concerns which it unites — whether, for instance, the United States Steel Corporation is a more efficient producer than the Carnegie Company, which it absorbed, or than the Lackawanna Company, which has entered the industry as a competitor with a capital of some $40,000,000. When the matter is ex-

Alleged economies in production.

amined in this way, and confusion of large-scale production with monopoly is avoided, the argument in favor of the trust does not appear to be very strong. Experience seems to show that in manufacturing industry there are limits beyond which an increase in the size of a company will not reduce the cost of production, and that this point is reached long before a single concern becomes large enough to monopolize the whole field. In practically every industry that has been dominated by a trust, independent concerns have continually made their appearance, and have competed so effectively that they have been crushed, if at all, only by foul means.

When, however, we turn to the work of marketing products, the case in favor of combination is not so weak.

Economies in marketing products.

A monopoly can avoid some of the outlay which competing firms incur for advertising and traveling salesmen, while occasionally something can be saved in freight rates by sending every order to be filled at the mill that is nearest to the consumer. But it must not be forgotten that a large amount of advertising is necessary in order to stimulate the demand for certain products, and that some trusts that originally made deep cuts in their advertising expenses found that the demand declined so rapidly that a more liberal policy was necessary. Then, too, a factory that is content to supply its natural territory and not ambitious to control all markets, however distant, does not need to make such excessive expenditures in pushing its sales. And finally the freight rates saved by avoiding cross-shipments are not a large factor in the case of products which are not of a bulky character; while, with bulky goods, production

is usually pretty well localized in the vicinity of the principal consumers before combinations are formed, so that there is generally little room for saving in cross freights. While it must be conceded that a monopoly may be able to effect some savings in marketing its products, it is certain that the economies thus attained have been greatly exaggerated.

More than twenty different economies are said to be attained by combinations, and the list is so formidable as to raise the question how, if the facts are as alleged, an independent concern can have the faintest prospect of success. Now the fact is that new competitors generally arise shortly after a trust is formed, and that competition with the combinations has steadily increased.[1] It is evident that the business world has not accepted the argument that the trust is more efficient than an independent concern of large size, but has proceeded upon the opposite theory. For the present, therefore, the student will do well to entertain a profound skepticism concerning the net advantages of the trust.

The persistence of competition.

A consideration that generally escapes notice is the fact that large combinations are subjected to constant

[1] Advocates of the trusts usually enter a demurrer here, and say that this proves nothing, since the new companies are organized for the purpose of selling out to the trusts at high prices. The point is not well taken, however, for no intelligent corporation manager, possessing a plant that could produce a commodity more cheaply than any possible competitor, would long continue to buy out inferior establishments that could not hope to live in the face of fair competition. A new and superior agent of production, like the power loom, can be set to work without buying up all the hand looms; and this would be true of the trust if it were the most effective method of organizing production.

expenses from which the independent concern may be comparatively free. The ablest legal talent must be employed at great expense to devise methods of circumventing inconvenient statutes; an expensive secret service is sometimes needed in order to spy out the affairs of competitors by methods that involve considerable wear and tear upon the self-respect of both principal and agent; large contributions must be made to the campaign funds of one or both political parties, since the politicians must be conciliated at all hazards; while enormous sums must be constantly invested in suppressing competitors, and giving a proper warning to prospective interlopers. It will be observed that we here assume that the company never stoops to actual bribery or makes large legislative expenditures which have to be charged up to the construction account. When, indeed, all factors are taken into consideration, it seems doubtful whether one should speak of the net savings or the net wastes that result from combination.

Disadvantages of a combination.

§ 130. The whole ground covered by the debate concerning the advantages of the trust is too large for us to examine it in all details, but it should be remarked that the argument in favor of combination usually begins with the proposition that competition is not only a wasteful but a destructive process. Combination is represented as the natural refuge for competing concerns that have been wasting their substance in a life-and-death struggle for survival; and, in particular, it is alleged that hard times, which destroy profits, are the real parents of the trust movement. The claim is disproved by the simple fact

The alleged destructive character of competition.

that trusts are formed, not in times when business is depressed, but in periods of prosperity. In 1893, the year of the last serious panic, new combinations were formed with a capitalization of $239,000,000. The following year, when the prostration of industry was complete, the capitalization of organized trusts was only $30,400,000; and the movement continued to show small proportions until 1898, when prosperity had fully returned. In that year the newly organized trusts had a capital of $708,000,000; in 1899 the figures rose to $2,243,000,000; and in 1900 stood at $831,000,000. After 1902, when conditions in the stock market became unfavorable, it proved difficult to carry through any sort of scheme for securing the "economies of combination"; not adversity, then, but prosperity seems to be the condition favorable to the growth of trusts.

The recent trust movement in the United States.

§ 131. This brings us to a more important consideration. The combinations formed between 1897 and 1902 were organized not for the purpose of realizing economies in manufacturing commodities, but for the profits to be derived from marketing stocks. The return of prosperity sent investors into the stock market in search for securities in which to invest the profits drawn from their business enterprises. Under this demand stocks rose to high prices and a speculative fever was induced which broke all restraint and carried prices up to still higher figures. This was the opportunity for the promoter of companies, and he was not slow to seize it. The country needed few new railroads, and the best thing to operate in was the staple branches of manufacturing industry. Options were secured upon large

numbers of plants, good, bad, and indifferent; extravagant prices were offered, payment being made more often with securities than with money; and the stocks or bonds of the newly formed combinations were offered to investors, who greedily seized the bait. This process continued as long as the public would purchase the securities, and it came to a close when, in 1902, the investor concluded that he had had enough and abandoned Wall Street. The economies of combination figured largely in the prospectuses of the new companies, but they had little or nothing to do with the entire movement.

Overcapitalization.

The ordinary method of capitalizing a trust was to issue preferred stock or bonds in order to pay for the plants, and then to print as much common stock as there was any prospect of selling to the public. Thus the common stock has almost invariably represented nothing but water; while the preferred stock, issued to pay for factories bought at exorbitant prices, has usually exceeded a conservative valuation of the property owned by the trust. The result has been what one might have expected; some of the trusts have not disappointed the persons who bought their bonds or preferred shares, and have even managed to pay something on their common stock; but the majority have shown much less favorable results, and have caused serious losses to investors.

Special privilege a cause of trusts.

§ 132. But the profits derived from floating companies are not the only cause of the formation of industrial combinations, and do not account for the success which some of them have attained. Patents have been a factor of some importance, the

production of certain products, such as cigarettes, barbed wire, and wire fencing, having been controlled for a time by reason of the ownership of all the available patents. Discriminating railway rates have had a vast influence in fostering monopoly,[1] and it is probable that some of the largest trusts still enjoy more favorable terms than their competitors. Then, too, elements of natural monopoly can be discovered in many of the combinations. The Standard Oil Company has profited greatly through its control of pipe lines,[2] the United States Steel Corporation owns a large part of the supplies of Bessemer ore in the United States, and in the copper industry the effort has been made to secure control of all the principal mines. It seems probable, in fact, that whatever tendency toward monopoly may have existed in manufacturing industry has been due to the causes here mentioned rather than to any economy derived from replacing large-scale production by monopoly.

§ 133. Some of the responsibility for the formation of trusts and particularly for the extortion which they have sometimes practiced must be laid at the door of our protective tariff, which imposes heavy duties upon imported goods that might other-

The influence of the tariff.

[1] The early growth of the Standard Oil Company is attributable chiefly to this factor; and, despite denials, it seems clear that rates are still adjusted so as to favor the points where this concern's refineries are established. In most cases proof of the existence of this evil is hard to obtain, but it can be adduced in the case of the beef trust and some others.

[2] By controlling the pipe lines the Standard Oil interests can oblige independent companies to pay sixty cents a barrel for service which costs but ten or twelve cents to provide; and it has here an advantage of about one cent a gallon on oil exported from the country.

wise compete with the products of the trusts. It was the original theory of protection that, although foreign competition might be prevented by means of a high duty, competition among domestic producers would insure fair prices to consumers. The situation is radically altered, however, when foreign competition is excluded by tariff regulations of the government, and then the home manufacturers unite to raise prices under the shelter afforded by the tariff. In 1904, for instance, American railways were compelled to pay $28 per ton for steel rails delivered at Pittsburg, while they transported to Canada similar goods for which the Canadians were charged $20 per ton. This sort of thing is common in the iron and steel industry, and occurs frequently enough elsewhere. Some few of the trusts, such as the sugar combination, have been formed largely because of conditions created by the tariff; and the power which most of the others have possessed over prices has been greatly increased by reason of the tariff duty. To this it is sometimes replied that the Standard Oil Company originated in an industry that was not dependent on the tariff, and that trusts exist in England under free trade. Neither consideration is relevant, however, for no one imagines that all trusts are due to the tariff; while it is a well-known fact that in England few combinations exist enjoying any such control as American trusts possess over their industries, and that no English trust can levy a tribute of a single penny on account of the action of the government in excluding foreign competitors. The simple fact is that the tariff called a few trusts into being, and enables most of the others to raise prices higher than

would be possible if competition prevailed at home or relief could be secured through foreign sources of supply. A reform of the tariff would not settle all problems connected with trusts, but it would curtail their power of plundering the public.

§ 134. It is sometimes alleged, indeed, that the trusts do not raise the prices charged consumers, and statistics are produced in support of this contention. The admirers of the Standard Oil Company, in particular, have insisted that this concern is responsible for the reduction in the price of refined export oil, which fell from thirty cents in 1870 to about six cents in 1898; and many people are inclined to the belief that this trust has actually cheapened oil. But such statistics do not show the margin or difference between the price of crude oil, which the Standard buys from the wells, and the refined product; and, clearly enough, it is only by observing what this margin has been that one can judge of the effect of the monopoly upon prices. In 1870 the difference between the price of crude oil and that of refined ranged from fifteen to twenty cents, and by the close of 1879 competition between the Standard Oil Company and various rivals had reduced it to between five and six cents. In 1882, when the trust was finally formed, the margin was seldom as high as six cents; and from that day to the present it has never fallen, except temporarily, under the influence of competition; but whenever the disappearance of competitors or the necessities of the consumers would permit, the margin has increased. The decline in the margin between crude and refined oil was brought about, therefore, prior to 1882, by the

Trusts and prices.

influence of competition; since that year monopoly has checked the movement. Moreover, the export prices do not show what domestic consumers pay for their oil. In 1901 the Industrial Commission found that in regions where competition was met from local refiners, the Standard Oil Company sold oil for as little as 5.5 cents; while in places where competition did not exist, the consumers paid as much as twenty or twenty-five cents. These discrepancies cannot be explained by differences in the cost of transportation, since the freight rates account for but a fraction of the inequalities; the fact is that wherever local refiners can get oil and compete with the trust, prices are low, and that wherever competition is absent, extortionate rates are charged. Most other trusts make a similar showing, when the prices of their finished products are compared with the prices of the principal raw materials, and it is only from competition that consumers can expect relief.

§ 135. For a dozen years remedies for the evils caused by trusts have been under discussion; but as yet nothing has been accomplished by legislation, even in the direction of taking away from the monopolies privileges that are extended to them under our existing laws. At the present time publicity is the thing that is most often recommended; and it is argued that, if the trusts can be induced or compelled to disclose the real facts concerning their earnings and financial condition, we shall be able in time to collect information that will enable us to devise a sovereign remedy. No one can doubt that, in the interest of both the investor and the general public, reasonable publicity is to be desired;

Proposed remedies: (1) Publicity.

but no further knowledge than we have at present is needed for remedying evils that are already known to exist. No additional evidence, for instance, is required to establish the fact that steel rails have for years been held at a price about eight dollars above the price charged to foreign customers. Therefore the thing to consider is what shall be done about the matter. And when this plain question is asked, many persons who clamor for publicity are discreetly silent. The federal government has established a Bureau of Corporations which is expected to engage in a thorough study of the trust problem, but no discoveries that it will ever make can obviate the necessity of taking action with reference to conditions already known to exist. Additional knowledge will always be welcome; it will not prove a satisfactory substitute for action.

(2) Abolition of railroad discrimination.

More is to be expected from a serious effort to grapple with the evil of discriminating freight rates. This subject will receive further consideration in the following chapter; for the present it is enough to say that a number of trusts probably receive favors from the railroads, and are thereby given a material advantage over possible competitors. Until all persons receive the same treatment from transportation agencies, a free field for competition cannot exist.

(3) Reform of the tariff.

Another remedy for a part of the extortion practiced by trusts is to reduce or remove the tariff duties imposed upon monopolized products. This is a proposal which, naturally enough, has been slow in gaining the support of protectionists. It is said that removal of duties would destroy not only the trust, but the industry; yet this is no excuse for refusing to cut down

the duty to the lowest possible limits. In the case of most of the important trusts, it is tolerably certain that the complete removal of the duty would have no effect except to destroy their power to plunder the public. And it is certain that this is the remedy that trust magnates most fear; they are willing that people should discuss to the full the advantages of publicity, provided that nothing is done with the favors accorded by our present tariff.

(4) Prevention of unfair competition.

It has been proposed, also, to declare unlawful some of the tactics now employed by certain trusts in order to intimidate competitors. Whenever an independent oil refinery is built, the price of oil in that locality is at once reduced by the trust to unprofitable figures; and such action frequently bankrupts the newcomer. Other combinations have refused to sell their goods to dealers who patronized competing companies, or have sold only on terms that could leave the wholesalers or retailers no profit. In these and other ways systematic intimidation has been practiced, and any one who contemplates entering an industry controlled by a trust must expect to meet this sort of competition. The remedy proposed is to apply to the large corporations of the present day the same principles of law which have long been applied to common carriers and some other occupations, *viz.*, to declare that such an enterprise is affected with a public interest and must sell to all upon equal terms. Such a requirement would make it impossible for a trust to reduce the price in one locality in order to kill competition, while maintaining it at high figures elsewhere; if enforced, it would encourage competition and make it difficult to maintain a monopoly. Some-

thing of the sort may yet have to be attempted; but until we learn how to oblige our railroads to accord equal treatment to all shippers, it is doubtful whether much could be accomplished by attempting to bring other industries under the laws applicable to public callings.

A reform of the state corporation laws, by which speculative promoting should be restricted, the power of corporations more carefully limited, and responsible management in the interest of stockholders assured, is one of the chief desiderata; it is also the thing most difficult to attain. Some of the states are ready to impose upon corporations all needful restrictions, but others will undertake nothing of the sort, preferring rather to encourage the incorporation of all kinds of companies under their lax laws for the sake of the large fees that can be obtained in this manner. In time the evil results of having forty-five different kinds of corporation law in the United States, and the fact that a sort of Gresham's law sends corporations to the states where the standards are lowest, may lead our people to demand uniform and safe legislation; but there is no prospect of such a result being attained in the near future.

(5) Reform of state corporation laws.

In view of this fact, it has been proposed that Congress should establish a federal corporation law for companies engaged in interstate business. Generally it has been recommended that incorporation under this law should be voluntary; but the United States would have the power, by various indirect means,[1] to compel every concern that desired to engage

(6) A federal corporation law.

[1] It might, for instance, levy a tax of ten per cent on the gross receipts of all state corporations carrying on interstate commerce. This would be similar to the tax now levied on the notes of state banks.

in interstate business to take out a federal charter. The principal objection to this proposal is that it would transfer to national control a large share of the whole business of the country which has been subject heretofore to state authority, so that it would be a formidable step toward centralization. But, in reply, it may be said that it would affect only business that is already national in character and cannot be controlled adequately by the laws of the several states. It is certainly an anomalous condition of things in which three or four states create, under laws that permit or even invite fraud, companies that undertake to operate over an entire continent; nothing like it is tolerated in any other country. The climax of absurdity is reached in the case of the "tramp" corporation, which is forbidden to operate in the commonwealth that charters it, and is given a roving commission to prey upon the people of other states. The business of the large corporations is already national in character and extent, and should be regulated by uniform and safe laws. If the states do not remedy the evils now caused by their own negligence, it is probable that the aid of the national government will ultimately be invoked.

Conclusions.

§ 136. The trust problem presents many diverse features which will not allow us to reduce our analysis to a single formula; for many things have contributed to the movement toward monopoly in recent years, and no single remedy will meet all the requirements of the situation. After considerable delay and great inconvenience, some of the evils caused by the trusts seem to be settling themselves. Speculative promotion has been brought to an end, at least temporarily,

by the refusal of the public to buy shares of bubble companies; high prices have attracted large amounts of capital into several industries, notably that of iron and steel; and competition is beginning to afford some relief to consumers. The few men who imagined, only a few years ago, that it would be possible to bring all staple branches of manufactures under their control are learning that it is not an easy matter to stifle competition. Except when based upon a natural monopoly of minerals and other materials, or in cases where transportation facilities can be controlled to their advantage, it is probable that the power of trusts will steadily decline, and that an increasing proportion of the growing business of the country will fall to their rivals. Already one hears less about the economies or other beauties of consolidation, and more about the weaknesses of mammoth combinations or the persistent force of competition. Monopoly has never been an agreeable thing for its victims, and a free people will not permanently tolerate it.

FOR SUPPLEMENTARY STUDY

General: HADLEY, Economics, 151–179; MARSHALL, Economics, 537–553; SEAGER, Introduction to Economics, 188–204, 434–459, 476–509.

Special: CLARK, The Problem of Monopoly; ELY, Monopolies and Trusts; JENKS, The Trust Problem; MEADE, Trust Finance.

CHAPTER X

RAILROAD TRANSPORTATION

I. Railroad Competition and Combination

§ 137. Railway construction began in the United States in 1828, when work was commenced on the first section of the Baltimore and Ohio Railroad. By 1840 there were 2755 miles of road in the country, practically all in the Atlantic states and consisting of short independent lines radiating from Boston, New York, Philadelphia, Baltimore, Richmond, and Charleston.[1] During the next decade railroads were extended with considerable rapidity, and the movement became even more rapid after 1850, so that by 1860 the railway mileage of the country had increased to 28,010 miles and the interior of the Mississippi Valley had been connected with the Atlantic seaboard. Although checked by the Civil War, railroad building was recommenced after 1866 on a larger scale than ever before, and, with the aid of the national government, the first line was pushed through to the Pacific coast. In 1873 the country had 68,484 miles of iron roads; but since then many additional lines have been built, so that, in 1904, no less than 209,000 miles were in operation. Of late, however,

The construction of railroads.

[1] See JOHNSON'S American Railway Transportation and SCRIBNER'S Statistical Atlas for maps showing railroad construction by decades.

the rate of growth has decreased, and the new construction has been confined very largely to piecing out existing systems, laying double tracks, or building short branches. With the present needs of the country tolerably well supplied, our mileage is nearly ten per cent greater than that of all Europe, and equals about two fifths of the total for the entire world.

§ 138. The early railways were built, much as trolley lines have been during the last decade, as local roads and chiefly by local enterprise. The scantiest provision was made for through traffic, and it was necessary for a long time to transship freight at each terminal point where it passed to another line of road; while passengers were obliged to change cars with equal frequency. Between such cities as Albany and Buffalo, for instance, there were originally as many as ten or eleven different roads, each run in its own way and handling through traffic by the most complicated and embarrassing methods.

Character of early roads.

In time, connecting lines were obliged to coöperate with each other for the purpose of interchanging business, agreements were effected by which through trains could be run, and fast-freight lines were organized to own cars, collect freight, and arrange for the convenient dispatch of long-distance traffic. Between 1850 and 1870 an increasing degree of coöperation was reached by connecting lines, and the service which railways could render the country was vastly enlarged. In this manner, during the period just mentioned, a rapidly growing business between the Mississippi Valley and the Atlantic seaboard was developed.

Beginning of railway coöperation.

§ 139. Meanwhile the combination of short connecting roads into trunk lines had begun. In 1853 the New York Central was formed by the consolidation of the various roads between Albany and Buffalo; and sixteen years later the Hudson River Railroad was added to it, securing a connection with the city of New York. A similar process went on elsewhere during the fifties and sixties until, by 1870, there were a number of railroads that operated from 200 to 1000 miles of line. Between the Atlantic seaboard and points on Lake Erie and the Ohio River, the New York Central, the Erie, the Pennsylvania, and the Baltimore and Ohio roads were reaching out for western business; while in the Mississippi Valley various trunk lines had established through service between Chicago and the terminals of the eastern roads, or had pushed out into the West and Northwest and even to the Pacific coast.

Trunk lines.

§ 140. The next step in railway combination was the union of eastern roads with those in the Mississippi Valley. By purchase or lease, the New York Central, the Pennsylvania, and the others secured control of lines that gave them entrance into Chicago and St. Louis. Thus our first railway systems were developed. These consisted of a number of different companies united under a single management and operating several thousand miles of road, some of it owned in fee by the parent corporation, other portions controlled by purchase of stock, others by lease, and still others consisting of roads built and financed by the parent company for the purpose of rounding out its system. By 1890 some of the largest systems controlled from 4000 to 5000

Railway systems.

miles of road, consisting sometimes of parallel lines, but to a larger extent representing a union of connecting railways.[1]

§ 141. This process not only increased the size of the railways, but it altered materially the character of their operations. The original local lines had enjoyed a monopoly in their respective districts, competition being possible only at a few points where rival roads met or water transportation was available. But the trunk lines could compete with each other for through traffic, which had grown to very large proportions, and the sharpest rivalry soon developed. For a few years prior to 1860 the eastern trunk lines were bidding for western business, and their rivalry was greatly intensified when, in 1869, the Pennsylvania and New York Central secured firm control of Chicago connections. "In 1868 rates from Chicago to New York stood at $1.88 per 100 pounds for first-class goods, and $0.82 for fourth class. In the summer of 1869 they fell, under the stress of competition, to a common rate of $0.25 per 100 pounds on all classes." At that time the new charges were ruinously low, and accordingly rates advanced to a materially higher level from 1870 to 1874. But in the latter year the Baltimore and Ohio secured entrance into Chicago, and a Canadian line entered the field. Immediately a new period of cut-throat competition began, which carried first-class rates down to $0.25 per 100

The growth of competition.

[1] West of Chicago and St. Louis, however, the great systems radiated from these centers, and consisted of a number of arms reaching out into the grain regions, where most of their freight was secured. *Cf.* HADLEY, Railroad Transportation, 86.

pounds, and fourth-class to $0.16. This warfare was brought to an end in 1877 by the establishment of a pool, a device which had already been employed in other parts of the country in order to meet similar conditions.

§ 142. In the railroad pool the through, or competitive, traffic was divided between the various roads in certain proportions; or else, without actually diverting freight from one line to another, the revenue which accrued from competitive business was apportioned in some manner that was considered equitable. By this means the inducement to cut established rates was partially removed,[1] and freight charges could be maintained at profitable figures. The agreement formed by the trunk lines in 1877 was maintained with more or less success until 1881, when it was broken by a dispute concerning the comparative rates charged from Chicago to the various eastern seaports. The pool was subsequently renewed, and with varying fortunes continued until 1887. In other parts of the United States, also, similar arrangements were maintained with more or less success, so that the general outcome of the sharp competition which had arisen about 1870 had been to drive the railroads into that form of combination known as the pool.

The pool.

The great weakness of the device arose from the fact that the courts held that pooling contracts had the effect of restraining trade and were contrary to public policy,

[1] Pools did not wholly remove the inducement. They were established for definite periods of time, and at their expiration a new allotment of traffic or revenue was necessary in order to continue the arrangements. Roads dissatisfied with the amount of business or receipts allotted to them would often cut rates secretly in order to increase their traffic to a point that would force the pool to grant them a larger allotment in the future.

so that such agreements could have no legal standing and could not be enforced as valid contracts. It followed that pools could have no more strength than might arise from the appeal which they could make to the interest or good faith of the members. It usually proved difficult to satisfy all the parties to pooling agreements, and some roads, especially the weaker ones, were constantly tempted to violate their pledges. By means of extra-legal penalties, such as fines, a certain amount of discipline was maintained; and various improvements in organization and management made some of the later pools much stronger than the earlier.

Legal status of the pool.

Here matters hung, when, in 1887, Congress passed the Interstate Commerce Law which prohibited all pooling contracts. This action was followed by a reorganization of the various railway associations, by which it was sought to eliminate the feature of pooling and yet hold the members together in such a manner as to prevent a renewal of rate cutting. Traffic associations, therefore, under various names and forms of organization, maintained their existence; and endeavored, with varying success, to prevent disturbances of rates. In 1897 the Supreme Court decided that the Trans-Missouri Freight Association, formed for the professed purpose of "establishing and maintaining reasonable rates, rules, and regulations," was an illegal combination to restrain interstate commerce, such as had been prohibited by the Anti-Trust Law of 1890. At the time, this decision was thought to be a final blow at the railroad pool; but it appears that traffic associations of one sort or another continue to exist and to exercise some control over railway rates.

Pooling prohibited.

§ 143. The earliest railway combinations had taken the form of unions of connecting roads, or of radiating lines that belonged naturally to one parent stem. The pool, however, was an attempt to secure united action between parallel, or competing, railway systems; it was designed to regulate or do away with competition. Prior to 1870 the result of combination had been to intensify, or even to create, competition; since that date its consequence has usually been to diminish or destroy it. Whether the pool would have proved a final adjustment of the relations of competing lines cannot be determined with certainty, but it seems probable that in time various causes would have led to the establishment of a closer and more permanent union of parallel roads. As it was, however, the law of 1887, by prohibiting pooling, turned the attention of railway managers to other methods of controlling competition and accelerated very greatly the process of consolidation. The pool was illegal; but there was nothing to prevent one road from securing control of a competing line by lease, by purchase of stock, or by new methods which were devised.

Later railroad consolidation.

In some cases the same group of capitalists secured control of competing lines, without attempting a formal consolidation; in others, different groups of magnates effected an interchange of holdings of stock and of directors, thus securing a "community of interest." Finally the device known as the holding company was resorted to, and might have been very widely employed if the courts had not decided that the famous Northern Securities Company, formed to

Methods of consolidation.

hold the stock of the Northern Pacific and Great Northern railways, was an illegal combination under the terms of the Anti-Trust Law of 1890. How this decision will affect certain other holding companies cannot be determined at the present time; but it will not do more than retard slightly the unification of railway interests. The holding company would have been the most popular device, since it would have enabled a few magnates to control vast properties with the smallest investment in their securities (§ 41). Yet there is nothing to prevent capitalists from bringing competing railroads under their control, or establishing a community of interest with the owners of other great railway systems.

Results of consolidation.

Prior to 1890, as we have seen, 5000 miles of line were the most that had been brought under the control of a single management; since that date, the combination of competing lines has given us great railway systems that operate from 10,000 to 22,000 miles. In 1902 there were nineteen systems which controlled 165,000 out of the 203,000 miles of railroad in the United States; and of these, the eight largest controlled 129,000 miles, or two thirds of the total mileage of the country.[1] Then, too, more or less close relationships are known to exist between several of the nineteen great railway systems; so that no less than 82,000 miles of road are now controlled by interests which seem to have come to an understanding with one another. It is a striking fact that, since 1890, consolidation has proceeded very

[1] For descriptions and maps of the great railway systems, see JOHNSON, American Railway Transportation, 52–68; also *The World's Work*, February, 1902; *Review of Reviews*, August, 1901.

largely upon a territorial basis, the purpose and result being generally to bring all the important roads in any region under one management. Northern New England, for instance, falls to one road and southern New England to another. The Vanderbilt and Pennsylvania systems occupy, respectively, the northern and the southern portions of the territory north of the Ohio or the Potomac and east of the Mississippi, although at some points their lines penetrate each other's fields; below the rivers just mentioned, we find two other systems which divide most of the traffic of the South; and in the Northwest a close combination of transcontinental lines has been effected.[1] The same result has been reached in other countries where the roads have remained under private management. This is, perhaps, indicative of what the future of railway consolidation is to be. It is very probable, indeed, that each section of the country will finally fall to the control of a single system which will either operate or dominate all the important lines of road.

Reasons for consolidation.

§ 144. The general reasons for railway consolidation should already be clear to the student who has mastered our previous discussion of large-scale production and monopoly. In the first place a railroad represents a very large investment of fixed capital, and must incur many other charges that are fixed and do not vary with the amount of business transacted. Interest on bonded debt, a large share of the taxes paid, salaries to important officials, remain the same, whether the amount of business is larger or smaller; the

[1] South and west of St. Louis the situation is not so clearly defined, and a number of different systems are yet in existence.

cost of maintaining the roadbed, track, and structures will be somewhat greater when the traffic is heavy, but will not be increased proportionately, by any means; while the actual expense of handling freight and moving trains is about the only element that will vary with the volume of business.[1] For this reason it is better for a road to accept traffic at any price that will more than meet the cost of handling and moving it — even though the surplus above variable expenses is far less than enough to cover the full amount of the fixed outlays fairly chargeable to it — rather than to lose the business and earn nothing whatever toward meeting the fixed charges (§ 69). Therefore, whenever the competition between parallel lines becomes intense, freight rates fall to exceedingly low figures, and the struggle that ensues is not inappropriately described as a cut-throat contest. Moreover, unlike a store or factory, a road that is bankrupted by its losses does not go out of existence; but it passes into the hands of a receiver, and continues to compete for business, often more recklessly than before. In the railway industry, therefore, competition is likely to entail severe losses, and to drive rival lines into some form of combination.

Wastes of competition.

In the next place, since the service which railways offer can be utilized only in connection with an expensive plant, the construction of a parallel line involves a needless duplication of facilities in many instances and is not desirable, even from the point of view of the public. It was originally supposed that railroad

[1] Even here, by loading cars to their maximum capacity, and increasing the size of a freight train, a larger volume of business can be handled at a lower average cost.

charges could be kept at a fair level by competition; and that, if a company already in the field exacted excessive rates, relief could be secured by chartering a rival road. In this way millions of dollars have been wasted in building unnecessary lines; yet the drift toward consolidation has not been checked, since ultimately the rival companies have found it advantageous to combine. Consolidation, in all such cases, enables companies to reduce expenses and improve facilities; and it may be considered the inevitable outcome of attempts to secure competition.

Finally, it cannot be doubted that another motive for consolidation has been the desire to secure monopoly power. A railroad, as we shall see, can never possess an absolute monopoly; for, except over local business, its power to control rates is limited in various ways. But between a rate that will yield a fair return upon the capital actually invested, and a charge that will enable a company to pay the highest possible dividends, there is often a striking difference; and the monopoly profits that may be derived from combination have been one cause of the movement in that direction. For this reason every step in the growth of monopoly in the transportation industry has intensified the public demand for governmental control over the railways, a problem which was never so important as it is to-day, and one which will require careful consideration in a subsequent part of this chapter.

Monopoly.

II. Railroad Rates

§ 145. Although, as we have seen, it was originally supposed that the chief work of the railway would be the

transportation of passengers, the event has proved that the freight service far exceeds all the other branches. In 1903, for instance, the railroads of the United States earned $1,342,500,000 from freight, $431,500,000 from passengers, $80,040,000 from mail and express business, and $46,790,000 from miscellaneous sources. Thus it appears that about three quarters of the total receipts of American roads come from the transportation of freight.

Freight service.

Even more important than the financial aspect of this branch of traffic is the influence which the freight service exerts upon the business of the country. It is desirable, of course, that people should be able to travel where they will at reasonable rates; but passenger fares are of far less economic consequence than the rates charged for carrying commodities. Freight charges are an integral part of the cost of producing all goods that are carried by railways, and are felt by every person in the community; in fact, their universality and inevitableness have led many writers to the conclusion that they resemble taxes. Passenger rates, on the other hand, enter to a much smaller extent into the cost of conducting business enterprises, and have far less effect upon productive industry.

Freight rates.

Further still, freight rates not only affect all consumers, but go far toward determining the fortunes of producers. A difference of a quarter or an eighth of a cent in the cost of transportation may have the effect of localizing production in one region instead of another; while if railroads are permitted to discriminate between persons, freight rates may destroy the business of one man and build up that of some other.

The influence of freight rates.

Localities that are fortunate enough to enjoy access to water routes are somewhat less dependent on this factor, but elsewhere the person who adjusts freight tariffs possesses what may prove the power of life and death over the majority of producers. It is for these reasons that the question of freight rates has come to be regarded as the most important part of the railroad problem.

Rate-making.

§146. When the first railways were constructed, it was supposed that the charges for carrying persons or goods would be adjusted readily enough upon a uniform mileage basis, like the tolls collected for the use of turnpikes or canals; and various attempts were made to enforce such simple tariffs. Here, again, original theories had to be abandoned after a brief trial, especially in the case of freight charges. In the first place, it was soon perceived that bulky products would not bear the same rates as goods which possessed great value in small bulk. If a road should undertake to charge as much for hauling lumber or grain or stone as for carrying furniture or dry goods, the bulky articles would never be carried at all; whereas, if it should charge no more for the latter commodities than it must concede to the former, the total earnings would little more than cover the cost of operating trains. Obviously tariffs must be adjusted in some manner to the value of the articles carried; and the result has been, in the United States, the development of elaborate systems of freight classification,[1] by which the railways endeavor to adjust their charges to what the traffic will bear.

[1] See JOHNSON, Railway Transportation, 113 *et seq.*, for a description of the three systems of classification now in force in the United States.

As soon as the uniform system of tolls was abandoned, the adjustment of freight rates became an exceedingly intricate problem. In the first place, it would be impossible, even if it were desirable, to pay much consideration to the cost of transporting each particular commodity. Railroads transport thousands of different articles in the same freight train, or even the same cars; and no one can possibly compute the share of the total expenses that is fairly chargeable to each article. It is possible to ascertain with tolerable accuracy the cost of making up and running a freight train loaded with a single commodity; but if different articles are carried, it is not practicable to determine what precise part of the total cost should be attributed to each. **Its complexities.**

The situation is rendered the more peculiar by the fact that so large a part of the total expenses of a railroad is fixed and does not vary with the volume of traffic that is secured. The cost of operating trains is the element of expense which comes the nearest to varying in proportion to the amount of freight carried; and even here the correspondence is not exact, since a considerable amount of additional business can be accommodated by filling cars to the limit of their capacity or by increasing the size of the freight train, without a proportionate increase of expense. It follows from this circumstance that it is profitable for a road to carry cheap and bulky products for anything more than the actual cost of handling the goods and moving the cars, even though the charge does not cover all of the fixed expenses, theoretically but not practically, attributable to every commodity transported. If something can be secured from low- **Different classes of traffic.**

grade traffic toward meeting a part of the fixed expenses, even though it be less than the full amount fairly chargeable, just so much less will need to be obtained from commodities of a higher grade. Such an adjustment of rates constitutes a discrimination against the latter class of goods; but, if the road could not secure anything from low-grade traffic, it would be necessary to obtain still more from traffic of a higher grade. For this reason, neither the producer nor the consumer of the latter is injured by the concession made to the former; on the contrary, by reducing rates to a point that will enable bulky goods to be transported considerable distances, the services of the railway to the community are increased and all classes of persons are benefited.

Local discriminations.

Not only is it impossible for a road to charge a uniform rate for all classes of freight, but it has not proved practicable to adjust the rate for any single commodity on a uniform mileage basis. At various points along the line of any railroad, or at its terminals, competition is likely to be encountered from other railways or from water routes. Unless its rivals are restrained from offering low rates between competitive points, the road must either reduce its charges at such places or lose all its competitive traffic. And if, as it would naturally do, it makes the necessary concessions at these points, competitive traffic will be carried at lower rates than similar business passing between way stations served by no other line. Thus it comes about that freight will be carried from one end of a line to the other at even a lower rate than is charged for traffic which is carried to some intermediate point, and in this way many local discriminations

arise. Shippers at the way stations who pay the higher charges not unnaturally look upon such a condition of affairs as a grievous hardship; but, if the discriminations in favor of the competitive points are no larger than the rivalry of other roads makes necessary, they are both justifiable and inevitable. Through lines, at whose terminals competition must be encountered, could not be built if they were allowed to charge no more for local traffic than for competitive. If local rates should be reduced to the level of those granted to competitive points, the road could not make any money; while if the rates for competitive traffic were raised to the level of those charged for local, none of this business would be secured. As a matter of fact, if something can be secured from competitive business, the road can afford to carry local traffic for somewhat lower rates than would have to be charged otherwise; local charges, therefore, are not higher, but may be lower, on account of the fact that competitive traffic is handled at reduced prices. It is true that the discriminations in favor of junction or terminal points tell against the business of the way stations; but the railroad merely accepts existing inequalities of situation, and does not create them. A town enjoying access to water routes had cheaper transportation before the road was built; and will continue to have it afterward, even if the new carrier refrains from bidding for competitive traffic. So, too, the construction of more than one line between two points creates an inequality of situation, for which neither road may be responsible, and to which freight rates must be adjusted.

Besides the competition of rival routes, the competition

of markets affects railway charges in a striking manner. Products of any kind that are carried to the same market from different places of production must sell for about the same price. Since the producer can obtain for his goods no more than the market allows, the railway cannot charge him very much more than is exacted by roads that serve producers in other sections of country without destroying his business and losing his traffic. If Georgia peaches are to be sold in Philadelphia and New York, or Alabama iron is to be marketed in Pennsylvania, the goods brought from the South must be carried at lower mileage rates than those procured from nearer sources of supply. Even if there is only a single road or railway system in each section of the country, competition for markets will still continue; and it is for this reason that a road can never have more than a partial monopoly.

Competition of markets.

Oftentimes, however, charging what the traffic will bear has passed into charging what it will not bear, and railway managers have adjusted rates in an arbitrary and unjust manner. They have discriminated in favor of places in which they or their associates were personally interested, and in favor of business enterprises in which they had a personal stake. Worst of all have been personal discriminations between shippers who were, upon the principles above stated, entitled to equal or substantially equal treatment. The Standard Oil Monopoly was, in its earlier days, built up almost wholly by outrageous discriminations in its favor; and to-day, it is very doubtful whether a competing company will not be ruined if in any way the railroads can compass its undoing. The

Unjust discriminations.

monopoly of dressed beef was established in a similar manner, unfair treatment of independent miners threw the anthracite coal fields into the hands of a few railroads, and in many other cases monopolies have been built up by means of rebates and unjust discriminations between shippers. Specious arguments have been advanced in defense of the favors accorded to large producers; among other things, it is argued that it costs a railway less to handle freight when it is supplied by the train load than when it must be gathered up in small consignments. But the cost of service is rejected by railway managers themselves as the basis for adjusting freight rates, and it cannot be appealed to in support of practices that foster monopoly. Charges cannot be adjusted upon a basis of absolute uniformity, such as is attained by a system of tolls; but it is possible and highly desirable to eliminate absolutely all personal discriminations. That it costs less to handle a train load than a car load should not weigh for an instant against the desirability of allowing all producers to use the national highways upon equal terms. This is a case in which discrimination is as inadmissible as it would be in the adjustment of postal rates, even though the latter item is a much smaller factor in the cost of production than the charge for transporting freight.

We cannot consider further the intricate problems connected with the adjustment of railway rates. It has been shown that a uniform system of tolls is impossible and undesirable, and that basing rates upon the cost of each particular service is undesirable and impossible. Freight charges must be adjusted to what the

Summary.

traffic will bear; it is necessary to discriminate in favor of bulky products and competitive business; and producers cannot be made to pay more than the competition of markets will permit. Against these hard facts, restrictive or regulative legislation will beat in vain; and a rational policy toward the railway must proceed in a full recognition of the conditions of the rate problem.

III. Public Control of Railroads

§ 147. Prior to 1870 the chief problem connected with railways in the United States was that of securing the construction of the roads needed to handle the existing volume of traffic and to provide for the future development of the country. So necessary was it for every community or section to obtain railroad facilities that our various governments, local, state, and national, aided construction by grants of land or money; while everywhere the disposition of the people was most friendly to railway enterprises. The charters of some of the earlier roads and occasional statutes placed certain restrictions upon profits, or attempted to prescribe systems of tolls, for goods and passengers, such as had been arranged for turnpikes or canal companies. In New England, moreover, some states established railroad commissions with limited powers of supervision and control. But, in general, little serious effort had been made to regulate or control the railroads of the country; and it seems to have been assumed that competition would oblige the companies to provide good service at reasonable prices.

Early policy toward railroads.

§ 148. But a few years after the Civil War the attitude of our people toward the railways began to change, and

about 1870 a great deal of dissatisfaction arose in the northern part of the Mississippi Valley. After considerable agitation of the subject, laws, called Granger laws, were enacted[1] in Illinois, Iowa, Minnesota, and Wisconsin, and then in other states, which were intended to correct various abuses that were believed to exist. That the farmer had real grievances cannot be doubted; not only were rates frequently extortionate in themselves, but, still worse, unjustifiable local and personal discriminations greatly aggravated the situation. Some of the new statutes, however, were unwise and even unjust to the railroads; and it was found necessary to repeal them or to amend materially their provisions.

Development of a railway problem.

The managers of the railways, when the hostile legislation was enacted, went into the courts and endeavored to have it declared unconstitutional. They asserted that their roads were private enterprises and that a legislature could no more regulate the prices charged or service offered than it could control the details of any other business. This position was contrary to the well-established principles of the common law, by which common carriers were subject to public regulation in so far as it might be needed to insure the general welfare. And it appears little short of humorous when one considers that the very companies that now claimed to be purely private enterprises had originally asked and received the power to condemn, under right of

The public character of the railroad business.

[1] These are known as the Granger laws, since they were enacted in response to the demand of the Grange, an association that was then widespread in these states. See HADLEY, Railway Transportation, 133–136.

eminent domain, the land needed for the construction of their lines, upon the theory that they were undertaking work of great public utility and importance. In 1877 the Supreme Court decided, once for all, that a railway performs a service that is of public interest; and that, although the company remains a private corporation, it is subject to legislative regulation. By subsequent decisions the court has reserved to itself the power of deciding what acts of a legislature are to be deemed a reasonable and necessary exercise of the supervisory power which it is declared to possess, but since that time the public character of railway transportation has not been open to further debate.

State railroad commissions.

§ 149. The most tangible outcome of the Granger movement was the establishment of various railway commissions in the West and South with power to regulate charges and otherwise control the transportation industry. Meanwhile, in the East, another type of commission had been developed, which possessed no power to issue orders to the railways, but was authorized to collect information and make recommendations to the legislature. Although appearing to possess greater authority, most of the so-called mandatory commissions actually accomplished less than the advisory commission of Massachusetts. In that state the high character of the commission itself, the fact that the railroads were older and more stable, and the influence of an alert public opinion, resulted in the enactment of beneficial laws or the acceptance by the roads of many of the recommendations that were made. Under different conditions, however, the Massachusetts plan would not have produced a

satisfactory result; and the tendency in recent years has been toward giving the state commissions mandatory as well as advisory powers. At the present time some thirty-two of the states have established commissions that exercise more or less control over railroads.

The Interstate Commerce Law.

§ 150. The control which the states attempted to exercise by statute or through commissions extended for some years to all railroad traffic, interstate as well as intrastate; but in 1886 the Supreme Court decided that a state could regulate only the latter, the former being declared to be subject exclusively to national control. This decision took away from the state commissions a considerable part of their power, and intensified greatly the desire for federal regulation of the railways. Accordingly, in 1887, Congress enacted the Interstate Commerce Law, upon which most later discussions of railroad control have turned.

Its provisions.

The act of 1887 applied only to interstate traffic, but contained a number of far-reaching provisions. It prohibited extortionate charges and also all unreasonable discriminations between persons, localities, or different classes of traffic. Then, more specifically, it prescribed that no common carrier subject to the act should charge more for transporting passengers or goods a shorter distance than it received for a longer, the conditions being substantially the same and the shorter distance being included in the longer.[1] It also prohibited

[1] This had the effect, not of prohibiting local discriminations, but of limiting them to such a degree that the competitive point could not actually receive a lower rate than the station not favored by competition. Of course a local discrimination not great enough to make the charge for a

the pooling of freight traffic or of aggregate money earnings by railways, with the purpose of obliging the roads to compete with one another; in fact, the principle that competition can and should control the industry of transportation was that upon which the entire law was based. Other provisions of the act required publicity of rates and some other things which cannot be considered here. Finally an interstate commerce commission was appointed to enforce the law, and given powers that were supposed to be ample for that purpose. This body was to receive complaints from shippers or others, investigate them, and adjudicate the cases as they might arise; but the railroads, of course, could appeal from the decisions of the commission to the courts of law. The intention of Congress was that all questions of fact should be studied and decided by the commission, and that any legal problems that might be involved should be settled by the courts.

Results of federal regulation.

§ 151. The actual results of the Interstate Commerce Law have fallen far short of the expectations of its framers, largely on account of legal difficulties which the commission has encountered in its efforts to enforce the act. When the commission has appealed to the courts to enforce its orders, or railroads have instituted suits in order to obtain a modification of them, the courts have not accepted as final the facts ascertained by the commission; but have reheard the cases in all details, even allowing the carriers to introduce new evidence not submitted at the original hearing. The effect of this has been, on the one hand, to encourage the roads not to make

long haul less than that for a short haul might be condemned by the commission as unreasonable under the previous provisions of the act.

a full disclosure of their cases before the commission, whereby its authority and efficiency are impaired. And, on the other hand, the necessity of rehearing each case in all its details, first in the lower courts, then in the higher if an appeal is taken, has led to much protracted litigation which has resulted in what is, to all intents and purposes, a denial of relief to shippers. When it takes nine years, as it has done, to carry a case before the commission and then through various tribunals up to the Supreme Court, the remedy provided by the law is as good as no remedy at all; for business may be ruined irretrievably in the meantime, while the long delay deters shippers from resorting to tribunals that are so slow and expensive.

Furthermore, the Supreme Court has limited very narrowly the powers of the commission. For a number of years after the enactment of the law, the commission, when it found that existing charges were unreasonable, undertook in many cases to determine what rates would be reasonable. But the Court at last decided that the law of 1887 conferred no such authority upon the commission, and intrusted it with nothing more than the power of deciding whether past rates had been reasonable or not. Since the only adequate remedy for an unjust rate is the establishment of a just one,[1] this decision stripped the commission of all real control over railway charges.

The powers of the commission.

[1] Conceivably, when the commission has decided a rate to be unjust, the shipper might bring suit for damages and recover the amount unjustly taken from him. Practically, the damage is hard to compute, since it may amount to the utter ruin of one's business; while the average shipper cannot, as experience shows, make use of this uncertain and expensive remedy.

The fate of the long- and short-haul clause of the act of 1887 is equally interesting. The law did not prohibit charging more for a short haul than a long haul in cases where the conditions were dissimilar; and the commission soon decided that competition of water routes or *intrastate railroads not subject to its authority* might be sufficient to make the conditions so unlike as to justify a lower charge for a long haul. The Supreme Court, however, in the test case, held that competition of *other roads subject to the act* was enough to modify the situation and justify a lower rate for a longer distance. The result is that in all cases where any sort of competition prevails, railroads may adjust their charges as they please, so that the long- and short-haul clause is practically of no effect.

Long and short hauls.

But although in many important matters the Interstate Commerce Law has been a disappointment, the act has produced a number of excellent results. Greater publicity of railroad rates has been secured, useful statistics have been collected, the relations of the railroads to one another have been improved in various ways, while the investigations and recommendations of the commission have tended in a number of directions to secure a better adjustment of railway charges. Then, too, the entire experiment has had considerable educational value; and we can now see, more clearly than in 1887, a way out of some of the problems presented by federal railway regulation. In 1903 certain improvements were made in the sections of the law relating to personal discriminations, and further changes are likely to be introduced before many years have passed.

Other details.

§ 152. Experience seems to show that the interstate commerce commission should be given increased powers in several directions. It should be authorized to prescribe for all interstate roads a uniform system of accounts, and empowered to inspect and audit the books of railways. In this matter the laws relating to national banks furnish a precedent that should be followed in our regulation of the railroad industry. In the second place, the commission should be authorized to prescribe reasonable rates in cases where existing charges are found unreasonable, subject, of course, to an appeal to the courts, in which the burden of proof should be thrown upon the railway that disputes the findings of the commission. This will not involve, as is sometimes alleged, the making of all railway rates in the United States; but it merely provides for a settlement of disputed cases, and leaves the work of actual rate-making to the railway officials. And, finally, all questions of fact should be determined in the first instance by the commission; and if a court should ever find that further investigation is necessary, the case should be referred back to the commission for reconsideration. Only in this way can a decision be reached in a reasonable time, and that fatal delay avoided which is equivalent to a denial of justice.

Further measures of regulation.

It has also been suggested that the Interstate Commerce Law should be amended in such a way as to permit pooling under the control and supervision of the commission. In behalf of this suggestion it is urged that the present act has merely forced railways to consolidate; and that it would be better to recognize frankly the monopolistic character of the railroad industry, and permit

Pooling.

pooling under public control. Much can be said in favor of such an experiment,[1] but it is doubtful if Congress can be induced to adopt such a policy in any near future. In any case, the first step is to secure such changes as will enable the commission to exercise an effective control of railway rates; and until this is done, it may be unwise to legalize the device of pooling.

National ownership.

§ 153. Federal control of private corporations engaged in interstate transportation has presented, and still offers, so many difficulties that national ownership and operation of railroads have been proposed. It is argued that the country has already been parceled out among a few large systems, so that the work of organizing the business upon a national scale has already been largely accomplished; and it is believed that public ownership offers in this field all the advantages that are claimed for it in the case of municipal industries (§ 122). On the other hand, purchase of the railways of the country would involve serious risks, since it would require an investment of $10,000,000,000 or $11,000,000,000, while the pressure of the employees for high wages and of the public for low charges might make the financial results very uncertain. Then, too, it would add more than a million men to the existing body of federal employees; and, even if civil service regulations should be enforced, there would exist here

[1] The usual arguments in favor of pooling are that it makes rates more stable, so that business men know what to count upon, and that it removes the temptation to grant personal discriminations. Such discriminations have arisen from the desire of competing roads to get business, and it is argued that pooling removes this pressure. In reply to the objection that pooling creates a monopoly, it is said that the through traffic, to which pooling arrangements apply, is subject to competition of markets or of water routes.

a formidable army of voters for whose support the politicians would bid, as they appeal now to the holders of military pensions. Finally, enormous difficulties would probably arise in the adjustment of rates and the extension or improvement of facilities. In the matter of rates, each section of country has interests that conflict with those of other sections, while similar conditions arise between industry and industry; and in asking for new and improved facilities, the same political jobbery would appear that to-day attends congressional appropriations for rivers and harbors or the extension of rural free delivery routes. Then, too, it is not probable that the railway service would continue to be as efficient as it is at present, or that the adjustment of rates would be elastic enough to meet the needs of business. Public ownership of municipal industries presents many difficulties, but it offers a simple problem when compared with the federal ownership of railways. In time, some of the objections which we have mentioned may come to possess less weight, and the matter may assume a different aspect; but, for the present, the difficulties attending the nationalization of railroads are so great as to leave us no alternative but the development of effective methods of federal control of this important industry.

FOR SUPPLEMENTARY STUDY

General: HADLEY, Economics, 153–158, 171–179, 398–400; SEAGER, Introduction to Economics, 460–475.

Special: HADLEY, Railroad Transportation, 1–124, 236–258; HENDRIK, Railway Control by Commission, 92–139; JOHNSON, American Railway Transportation, 213–304, 349–407; Report of the Industrial Commission, XIX, 259–484; The American Railroad.

CHAPTER XI

INTERNATIONAL TRADE

I. The Foreign Trade of the United States

§ 154. When our present government was established, the whole foreign trade of the United States amounted to something less than $40,000,000; by 1860 it had grown to $687,000,000 a year, and in 1892, breaking all previous records, it had risen to something over $1,800,000,000. Since the last date our foreign commerce has continued to expand until at the present time it is valued at $2,400,000,000. Ordinarily exports from the United States exceed the goods imported from other countries, so that the balance of trade is said to be "favorable"; and of late years the excess of exports has greatly increased, having ranged from $400,000,000 to $600,000,000.[1]

Growth of our foreign trade.

[1] The movement of our foreign trade in recent years is shown by the following table: —

FOREIGN TRADE OF UNITED STATES FROM 1899–1903 (INCLUSIVE)

YEAR	EXPORTS	IMPORTS	TOTAL FOREIGN TRADE	EXCESS OF EXPORTS
1899 . .	$1,227,023,302	$697,148,489	$1,924,171,791	$529,874,813
1900 . .	1,394,483,082	849,941,184	2,244,424,266	544,541,898
1901 . .	1,487,764,991	823,172,165	2,310,937,156	664,592,826
1902 . .	1,381,719,401	903,320,948	2,285,040,349	478,398,453
1903 . .	1,420,141,679	1,025,719,237	2,445,860,916	394,422,442

The principal exports from the United States have always been agricultural products, although in recent years the proportion of manufactured goods has steadily increased. In 1903 the country exported $221,000,000 of breadstuffs, $316,000,000 of cotton, and $179,000,000 of meat and dairy products, as well as $35,000,000 of tobacco and $34,000,000 of live animals. Among the exports of manufactured goods, iron and steel products held first place, showing an aggregate value of $96,000,000; and mineral oils came second, with a value of $67,000,000. Copper ingots and manufactures of copper supplied $39,000,000 of the exports, cotton manufactures $32,000,000, and leather with its various products $31,000,000. From 1893 to 1903 manufactured exports steadily rose from $158,000,000 to $407,000,000.

Exports.

Our imports consist mainly of food products and raw materials that we are unable either to raise at all, or to produce in sufficient quantity to meet the demand. Sugar was imported in 1903 to the value of $72,000,000, and coffee to the amount of $59,000,000; while imports of wool and of vegetable fibers equaled $61,000,000, imports of raw silk stood at $50,000,000, those of chemicals and dyes at $64,000,000, and of india rubber at $30,000,000. Imports of manufactured goods ready for consumption amounted in 1903 to no more than $169,000,000 out of total imports of $1,025,000,000, the largest ever known in the history of the country.

Imports.

§ 155. It is interesting to study the distribution of our foreign trade among the various countries with which we have dealings. Of our exports, no less than 72.5 per cent went to Europe in 1903, and about 9 per cent to

Canada, leaving less than one fifth of the entire export trade to be transacted with South America, Asia, and Africa. In Europe, moreover, over one half of the sales were made to Great Britain and Ireland; while Germany bought about 18 per cent of our European exports, and France and Holland about 7 or 8 per cent. It appears, in fact, that Great Britain, Germany, Canada, France, and Holland purchased in 1903 about $998,000,000 of the $1,420,000,000 of goods exported from the United States. In contrast to this condition of affairs, our import trade is far more widely distributed. Fifty-two per cent of the imports of 1903 came, indeed, from Europe; but this is a far smaller proportion than was shown by our European exports. Eighteen per cent of the imports came from Canada and Central America, 10 per cent from South America, and 14 per cent from Asia; Africa and Oceanica accounted for the remaining 6 per cent.

Our trade with various countries.

The reason for the unequal distribution of exports and imports is not hard to discover. Europe needs enormous amounts of our breadstuffs and meat in order to feed her large population, and draws heavily upon our southern states for the materials used by her cotton manufacturers; while the United States has no such urgent need for the manufactured and other products that Europe has to offer. On the other hand, the sugar, tea, coffee, wool, hemp, india rubber, and other supplies which this country is obliged to procure from foreign sources must be sought chiefly in tropical lands or the less thickly inhabited parts of the globe. So far as the United States and Europe are concerned, it is clear that her necessity is greater than ours; and that we possess, there-

Reasons for its present distribution.

fore, a material advantage in trade. This fact has sometimes encouraged Americans to boastful assertions of their superiority and to reckless disregard of the interests of the nations who are our best customers; it should rather lead us, by a fair and considerate policy, to cultivate the good will of the countries which now purchase so large a part of the surplus products of our farms, workshops, and factories.

II. The Nature of International Trade

§ 156. Merchants sell goods in foreign countries or import them from such lands whenever differences between domestic and foreign prices make it profitable to do so. The individual exporter or importer looks upon his transactions as exchanges of goods for money, or money for goods, as the case may be; and, from his point of view, international trade consists of the exchange of commodities for money. Yet the matter is not so simple as this, and the truth is that foreign commerce is a process of barter in which, for the most part, exports pay for imports.

Foreign trade is barter.

This is a hard saying for many persons, and it is desirable to present a few facts which prove its truth beyond all peradventure. From 1821, when figures of specie exports and imports are first available, down to 1896, the total movement of merchandise to or from the United States aggregated more than $53,000,000,000; while the total shipments of gold and silver amounted to less than $5,000,000,000. For the last generation gold has been the money used in international payments; and therefore a considerable part of the silver included in the

Statistical proof.

figures of the specie movement should be regarded as merchandise rather than as money. For the five years ending in 1903 the aggregate shipments of merchandise and gold (exported and imported) have been as follows: —

Year	Merchandise	Gold
1899 . .	$1,924,000,000	$126,500,000
1900 . .	2,244,000,000	92,800,000
1901 . .	2,310,000,000	119,200,000
1902 . .	2,285,000,000	100,600,000
1903 . .	2,445,000,000	92,100,000
	$11,208,000,000	$531,200,000

It appears that exports and imports of gold averaged no more than 4.7 per cent of the aggregate shipments of merchandise, and that over 95 per cent of our foreign trade occasioned no payments in money.

§ 157. The first explanation of this fact is that, in foreign trade, as in domestic, it is inconvenient and expensive to handle money when some instrument of credit can be made to do the work of exchange. Bills of exchange, therefore, are used in the larger number of international payments, and money is employed only in the settlement of balances. If imports exceed exports, gold may be exported to pay for the unfavorable balance of trade, while an excess of exports may bring gold into the country; but, in the larger proportion of cases, goods shipped in one direction provide the credits used in settling for commodities that move in the other.

This fact explained.

But there is an underlying, and more important, reason

for the fact that money is little used in international trade. Shipments of money, whether outward or inward, tend to affect the general level of prices and to limit themselves automatically to comparatively small proportions. An outflow of money in payment of an excess of imports decreases the currency in circulation, and tends to lower prices. Such a change in conditions makes the country a poor market for foreign products, while at the same time it decreases the cost of producing domestic products; and the result is that imports will tend to decrease, and exports to expand. The change in the movement of trade effected in this manner must continue until the balance ceases to be unfavorable, when gold shipments will cease of their own accord, since exports now balance imports. On the other hand, an excess of exports which brings money into a country tends to raise prices, to check purchases made by foreigners, and to increase sales of foreign products. As soon as these results have been produced, exports and imports of commodities must tend to an equilibrium, and the inflow of money will come to an end.

Movements of money are automatic.

§ 158. In the foregoing discussion it has been assumed that the only financial transactions between countries are those occasioned by the purchase of merchandise and the payments made on this account. The fact is, however, that many operations are constantly carried on which affect our problem. In the first place the older and richer nations of Europe have invested considerable capital in foreign countries, England, in particular, having made enormous investments in all parts of the globe. When such a transaction occurs, the investor or

International movements of capital.

lender must remit the amount of his investment; but thereafter the borrower must remit the interest charges. In this manner a country is at first a debtor for the capital which its citizens invest abroad, and is thereafter a creditor for the annual interest payments. Each year England has credits for some hundreds of millions of dollars of interest money; while the United States, a younger country which has received perhaps $2,000,000,000 of foreign capital, is a debtor for some $90,000,000 of interest.

Movements of banking capital.

Particularly important in influencing the course of the foreign exchanges are the movements of the capital of international bankers. If the discount rates in New York and London are low while they happen to be high in Paris, the international banking houses will ship a part of their capital to the latter city in order to take advantage of the better terms which the money can command. Sometimes, when a country is a debtor on other transactions and would normally begin to export gold, a rise in the interest rates will induce foreign creditors to invest the amounts due them instead of calling for instant remittance. In this manner, by offering a high rate of interest, a country can frequently borrow funds which must otherwise have been sent abroad in order to satisfy a balance of indebtedness.

Ocean freights.

Other international debts are incurred for ocean freights. A country must meet in some way the cost of carrying its imports; and, unless its own ships perform this work, foreigners must be paid for the service. On the other hand, if a country's ships carry exports to foreign lands, they will earn considerable sums that must be paid by foreigners. England, besides hand-

ling most of her imports in her own vessels, does a large amount of carrying for other countries, with the result that she is each year a creditor for the amount of the earnings of her merchant marine. The United States, however, imports but few goods in American ships, and earns little by carrying goods for other countries; so that it is regularly a debtor for some $50,000,000 or $60,000,000.

Travelers' expenditures.

Again, persons who travel abroad make expenditures which must affect the condition of the exchanges. The United States in recent years has incurred large debts for the sums spent by American tourists in excess of what foreigners have expended in this country. At the present time, this item must be as large as $50,000,000 or $60,000,000; and in 1900 and 1901 it was supposed to stand at not less than $100,000,000. Other factors still might be enumerated, but we have space to mention only one. London serves as a world's clearing house for the settlement of international debts, and the bankers of that city receive each year considerable sums for this and similar services.

Conclusions.

The net result of all these factors is that Great Britain is a creditor nation, and receives annually enormous credits for interest on her foreign investments, freights earned by her ships, and the services rendered by London bankers. In 1903 her imports aggregated £542,906,000 and her exports £360,447,000, the unfavorable balance of trade amounting to £182,459,000. The vast excess of imports represented the various debts that other countries owed her, and did not cause a large outflow of gold in order to settle it. On the other hand, the

United States in the same year exported goods to an amount that exceeded by $394,422,000 the imports brought in from other lands, and yet exported $2,108,000 of gold in excess of what was imported. The favorable balance of trade represented chiefly the balance of obligations incurred for the various invisible elements[1] that enter into the foreign exchanges. An examination of the trade statistics of other countries would disclose the fact that not only Great Britain, but Germany, France, Holland, Belgium, and Italy ordinarily have unfavorable balances of trade; while, besides the United States, Russia, Argentine Republic, Canada, Egypt, and Mexico show an excess of exports. The former countries are creditors of the rest of the world, and receive their annual dues in the form of an excess of imported merchandise; the latter are debtors and must send out an excess of exports in order to meet their foreign obligations.

The theory of the balance of trade.

§ 159. It was once thought that the object of foreign trade should be to secure a large favorable balance, which should bring money into a country; and for a long time the various nations of Europe regulated commerce in a number of injurious ways, endeavoring to make their exports exceed imports. Thus arose the theory of the balance of trade which controlled the commercial policy of the world until Adam Smith and writers of less note demonstrated its absurdity. Looking upon commerce as an exchange of products useful to both parties, Smith showed that the restrictions enforced

[1] The invisible elements are those which do not appear in tables of exports or imports of commodities. They have been enumerated in § 158.

by governments had the effect of preventing mutual service; and at the same time, he pointed out that money would inevitably be distributed over the world in the proportions required by the trade of each country, and that one nation could not hope to secure and retain more than its proper quota. Since his day economists have ceased to worry over the imaginary evils of an unfavorable balance of trade.

§ 160. Having grasped firmly the proposition that international trade is in its essence barter, we may proceed to a second principle which relates to the direction that this trade may take. Within any small area, capital and labor will migrate freely to the localities that afford the best facilities for conducting any industry; and production will be localized in those districts which offer the greatest advantages for raising or manufacturing each commodity. When exchange begins, each community will sell the things that it can produce with the smallest absolute expenditure of labor and capital for the things in which other communities have the advantage; while if any district is outstripped by some other in the production of every commodity, it will be deserted gradually by laborers and capitalists, and its industries will disappear. Within a small area, therefore, commerce will be based on the absolute advantages which each community possesses for the production of various commodities; and all articles will be produced in the places that can supply them with the smallest outlay of labor and capital. But capital and labor do not move with perfect freedom from country to country; for distance, differences in language and religion, and varying customs and political institutions

International trade based upon relative advantages of production.

all stand in the way. Although modern conditions have facilitated the process of migration, it is true, nevertheless, that only a part of the surplus labor and capital of older countries finds its way into other lands; and that the people of each nation are content to make the best of such resources as they have rather than expatriate themselves. For this reason, it will appear that *international commerce is based upon relative, not absolute, advantages of production.*

Relative advantages further considered.

By an absolute advantage is meant the ability to produce a commodity with the smallest expenditure of capital and labor. One country might conceivably have an absolute advantage over another in every branch of productive industry. A relative, or comparative, advantage, however, exists only in relation to or comparison with some other industry or industries in the same country. Thus the United States might have an absolute advantage of fifty per cent over England in the production of wheat, one of thirty per cent in mining iron ore, and one of twenty per cent in the manufacture of steel billets; in such a case American wheat raisers would have a comparative advantage over American producers of iron ore and steel rails, while our iron miners would have a comparative advantage over manufacturers of steel. Now, if no other factor entered into the case, the labor and capital of both countries would be most efficiently employed if the United States specialized in the production of wheat, and Great Britain in that of steel; and this is the manner in which things would work themselves out in the trade between the two nations.

This can be explained most readily by assuming that

two countries, say England and the United States, produce eight and only eight commodities; and that when commerce begins between them, the eight articles are selling for the following prices in each country:[1] — Illustration.

Commodities	Prices in England	Prices in United States
One ton steel rails	$14.00	$20.00
One pound wool	.15	.20
One yard carpet	1.20	2.00
One yard cotton cloth	.12	.15
One bushel wheat	.90	.60
One bushel corn	.70	.50
One pound leather	.20	.15
One pound pork	.15	.07

Under the conditions here represented, American merchants will find a profit in importing the first four commodities from England, and in exporting to that country the last four articles on the list. Trade may proceed for a time upon this basis until at last it appears that, at the existing scale of prices, exports and imports cannot remain equal in volume. If, then, an excess of imports develops, the United States will begin to export gold to England in order to settle an unfavorable balance of trade. The movement of specie must continue until prices fall in this country and advance in the other Conclusions.

[1] Assuming that these are the normal prices established by competition, it would appear that England had an absolute advantage over the United States in the production of the first four articles; and that, with the last four, the absolute advantage lay with the United States.

sufficiently to change the currents of trade and establish an equilibrium between exports and imports.

We may suppose, for instance, that the exportation of gold to England continues until prices advance twenty per cent in that country and fall in corresponding degree in the United States. After this occurs, the prices of the eight commodities will stand as follows in the two countries: —

Further illustration.

Commodities	English Prices	American Prices
Steel rails	$16.80	$16.00
Wool	.18	.16
Carpet	1.44	1.60
Cotton cloth	.144	.12
Wheat	1.08	.48
Corn	.84	.40
Leather	.24	.12
Pork	.18	.056

Obviously, at the new level of prices, no profit could be made on the goods which England formerly sold to the United States, with the exception of carpets; while the margin of profits on exports of American wheat, corn, leather, and pork would have increased to an enormous extent. In fact, there might now be a profit in exporting wool and cotton cloth to England, since the differences in prices would probably more than cover the cost of transportation. The result would be that imports from England would fall to small proportions, while exports from the United States would be largely increased.

In this case we have assumed a small number of com-

modities and a much greater change of prices than could hold true of actual traffic between the two countries, but the principle is valid with 10,000 articles of commerce and with slight changes in the general level of prices. The permanent trade between England and the United States consists of the exchange of products in which each country has the greatest comparative advantages; exchange of other goods, in which the difference between domestic and foreign prices is narrowest, will be intermittent, falling to small proportions, or even disappearing, when slight changes in prices wipe out the margin of profits. This, then, is our second principle: *in foreign trade comparative costs of production are the determining factor.*

Summary.

§ 161. The United States, of course, has commercial relations with many countries besides England, and our statement of the laws of trade needs to take this fact into account. In 1903 our exports to the United Kingdom were valued at $524,000,000, while imports from that country did not exceed $190,021,000; with Germany our exports stood at $193,841,000 and the imports at $119,772,000. With Cuba, however, our imports exceeded exports by over $41,000,000; in the South American trade, our excess of imports aggregated $66,000,000; and with Asiatic countries the net result was a balance of imports amounting to over $89,000,000. In this manner an excess of imports from one country may be offset by an excess of exports to another; and no serious outflow of gold will be occasioned provided that, upon the whole volume of transactions, exports and imports tend to an equilibrium.

Trade with all countries must be considered.

Whenever the equilibrium is disturbed, shipments of money tend to change prices and to equalize exports and imports.

It is necessary, however, to remember that many invisible elements enter into the determination of a country's position in the international exchanges. If on the invisible accounts a country is a debtor, the movement of commodities must be such as to produce an excess of exports sufficient to pay the indebtedness; and if the country be a creditor, the excess of imports must be sufficient to enable foreigners to meet their obligations. Upon the whole volume of international transactions, visible and invisible, there will be a constant equalization of debit and credit items, which is brought about chiefly by changes in the export and import of commodities. For this reason a favorable or unfavorable balance of trade can indicate nothing more than the position which a country occupies, as debtor or creditor, on account of the invisible elements of the exchanges; it can show nothing more than that a balance of exports or of imports is required in order to establish an equilibrium of international transactions.

Also the invisible elements in the foreign exchanges.

III. The Restriction of International Trade

§ 162. Foreign trade has always been restricted to a greater or less degree by customs duties levied upon goods exchanged between different countries. The earlier method was generally to impose a light tax, of from one to five per cent, upon all imports and exports; but the modern practice is to levy heavier rates upon the former and to exempt the latter, since export duties tend to destroy the trade unless the taxed commod-

Customs duties.

ity enjoys a monopoly in the foreign market. Customs duties may be either specific or *ad valorem* according as the mere bulk or the value of the commodities is made the basis of assessment; thus the duty of forty cents per ton which the United States levies upon iron ore is specific, while the tax on diamonds is ten per cent *ad valorem.*

§ 163. Import duties are sometimes levied solely for the purpose of obtaining revenue for the government. When this is the case, the duties are not made so high as to restrict very greatly the amount of goods imported, because such action would result in a loss of revenue. The English tariff at the present time aims to tax, as far as possible, only commodities that do not come into competition with the products of home industries; and whenever a duty is levied upon an article that is produced at home, an excise tax of similar weight is imposed upon the domestic product. The result is that the tariff gives no advantage to the domestic producer and interferes as little as possible with business conditions. A revenue duty must normally raise the price of a commodity by about the amount of the tax, since it is an added element in the cost of placing the product on the market. English merchants who imported tea paid to the government in 1900 the sum of $31,000,000, and there is no doubt that the largest part of this tax fell on the consumers.

Revenue tariffs.

§ 164. When duties are laid upon imports without an equivalent excise tax upon similar domestic products, the effect is to give domestic producers an advantage over foreign competitors. If the rates are not raised above the point at which the largest revenue is received, a tariff may be described as a revenue

Incidental protection.

tariff that gives incidental protection; this was, in general, the character of the tariffs established in the United States between 1789 and 1812.

But duties are often raised above the rates that yield the largest revenue, for the purpose of cutting down imports and protecting domestic producers. Every such duty is purely protective in character, and the revenue that it may yield is merely an incidental factor; indeed, duties are sometimes made so high as to be practically prohibitory, and to reduce the receipts to insignificant proportions. In the United States the tariff was doubled at the outbreak of the War of 1812; and in 1816, when a new law was enacted, many duties were placed upon a distinctly protective basis. Since that date our various tariff laws have usually been drawn with a view to extending a high degree of protection to domestic industries, although from 1833 to 1842, from 1846 to 1861, and from 1894 to 1897, reactionary tendencies manifested themselves.

Protective tariffs.

§ 165. The general effect of a protective duty is to increase the cost of importing a commodity and to encourage domestic labor and capital to undertake to produce it. In the United States protection has been invoked chiefly for the benefit of manufacturing industries; but in Europe, at the present time, the principal object of protection is to favor the landed interests in their competition with cheaper breadstuffs and meats of newer countries. Concerning its expediency, public opinion has always been divided; and the economic questions at issue have usually been complicated with political considerations.

General effect of protective duties.

§ 166. Approaching the problem first from a purely economic point of view, and ignoring political considerations, we must observe that the first effect of a protective duty is not to increase the amount of labor and capital that obtain employment, but to divert a part of a country's productive energy from the fields that it would otherwise have entered, and to place it in industries that are favored by the law. The only exception occurs when a high duty attracts foreign capital that would not have come into the country upon other conditions. In the United States a certain amount of European capital has been attracted in this manner,[1] but most of the funds invested in American enterprises have gone into railroads and other industries that have not been affected by the tariff; in fact, foreign capital seems to seek the unprotected industries in preference to the protected. In general, therefore, a protective duty does not increase the extent of a country's industry, but merely changes its character.

Economic effects of protection.

The principal objection to a protective duty is that a country's labor and capital, when left to themselves, find investment in those industries which offer the best advantages, so that protection diverts productive energy from more to less profitable employment. This is another hard saying which is not accepted by most friends of protection, but

Diversion of labor and capital into less productive industries.

[1] In 1892 it was claimed that some millions of foreign capital had been invested in the tin plate and other industries that had received increased protection in 1890. But even when the figures presented were accepted at their face value, they amounted to a very small per cent of the new capital that is annually invested in American manufactures, to say nothing of other industries.

its correctness is not difficult to establish. Our study of the nature of international trade shows us that foreign products can never come into a country except in exchange for some equivalent, because commerce is conducted for profit and not from motives of philanthropy. Moreover we have seen that imports cannot be bought solely by a continued exportation of money, since the outflow of gold lowers prices and destroys importers' profits. Imports must be paid for chiefly by exports of commodities, and prices at home and abroad will always tend to a level that will permit the latter to equal the former. Foreign competition, therefore, can never prevent the investment of a country's labor and capital in enough industries to furnish the commodities by which payment is made for imports.

Most industries cannot be protected.

Moreover, in any case, the bulk of the work which a nation requires to supply its needs must be done at home and can, by no possibility, be performed in another country. Domestic services must be rendered in the household, professional callings must be pursued in the country where the patrons live, buildings must be erected where they are wanted, railroad and other transportation agencies require the services of local laborers, while mercantile pursuits call for an immense amount of labor that must be performed in the country. Then, such workmen as barbers, bakers, butchers, laundresses, hotel keepers, gardeners, hostlers, and the like, are engaged in occupations that cannot be affected by foreign competition. Only in the field of agriculture, mining, and manufactures is it possible, generally speaking, to utilize the products of foreign capital

and labor instead of those of domestic make; and it is only these industries that can be affected by a tariff. Even here there is a great deal of work that foreigners cannot perform, such as that of the cobbler, the village blacksmith, and the wheelwright; while bulky products such as bricks, or perishable goods like milk and garden truck, cannot be procured from foreign countries except in districts adjacent to a frontier. The statistics of occupations collected by the census disclose the fact that probably more than one half of the people engaged in gainful occupations in the United States are doing work which could not conceivably be protected by a duty on imports. Moreover, of the remainder who are engaged in agriculture or manufactures, it appears that by far the largest proportion is found in occupations that produce enormous quantities of goods for export. In fact, when allowance is made for callings which cannot conceivably be affected by foreign competition, and for agricultural and manufacturing industries in which American producers have a marked advantage over foreign, it becomes evident that not more than ten per cent of the labor and capital of the country is in a position to profit by protection.

The effect of free exchange.

Now if perfect freedom exists, the labor and capital of any country will flow first of all into occupations in which, from the very nature of the case, no foreign competition can be felt; or will be invested in those branches of agriculture and manufactures in which the prevailing level of prices makes it profitable to produce goods both for domestic use and for export. No competition by foreigners can ever alter this fact, which assures to domestic labor and capital

the amplest and most profitable employment; for the industries in which goods can be produced for export are precisely those for which the country possesses, at the time being, the greatest comparative advantage. Therefore the production of wealth will be greatest if the energy and enterprise of the people are devoted to these branches. If the labor of 200 men and capital to the amount of $200,000 will produce 500,000 bushels of wheat or 200,000 yards of cloth in the United States, while in England they will produce 300,000 bushels of wheat or 200,000 yards of cloth, the former country, while under no absolute disadvantage in the manufacture of cloth, will have a considerable comparative advantage in the production of wheat. If no trade is carried on between the countries, and each one divides its labor and capital equally between the two industries, England will produce 150,000 bushels of wheat and 100,000 yards of cloth; while in the United States the figures will be respectively 250,000 and 100,000. But if the United States invests all of its labor and capital in raising wheat, and England devotes itself exclusively to the production of cloth, the total product of the two nations will be 500,000 bushels of the former commodity and 200,000 yards of the latter. Thus we see that the opening of an unrestricted trade, which would have to be based upon comparative advantages of production, would increase the aggregate production by 100,000 bushels of wheat.[1] In this way, therefore, free-

[1] Sometimes it is objected that the so-called more productive industries cannot afford a sufficient field for all the labor and capital of the country. But it is evident that, when labor and capital begin to crowd into one industry in such quantities that it becomes less profitable, investment will naturally begin in the industry next in order of advantage. No tariff is

dom of exchange must set the people of each country at work upon the industries in which their resources can be most advantageously employed.

§ 167. So far as the present productivity of a nation's industry is concerned, there is no answer to the argument just stated; but it may be argued that the causes that now make certain industries less profitable than others may be removed with proper encouragement, and that it is not desirable to confine a people to a few industries like cloth making or the production of grain. It may be that a few years of experience will enable *entrepreneurs* to learn the best methods of production, and laborers to acquire a higher degree of skill, so that the industry will become as profitable as any other. In such a case the initial loss occasioned by the establishment of a less productive enterprise will come to an end; and the country will have the advantage of a greater diversity of its industries, which will give larger scope for the development of the various aptitudes of its people. That such a result may follow the establishment of a few wisely chosen industries by means of protective duties is generally conceded by economists, and seems to be open to no doubt. It should be observed, however, that any industry thus developed is necessarily one for which the country offers superior advantages provided that the people learn how to utilize them. The effect of the protective duty, therefore, is merely to hasten the establishment of enterprises which would have come into existence at some time without such aid.

Present and future effect of protection.

needed to establish a new industry if an old one becomes so crowded as to be no longer more profitable than the other.

This is the "infant industry" argument upon which the earlier protectionists relied greatly in the United States. As formulated in the previous paragraph, it states what may follow the imposition of protective duties upon the products of a few wisely chosen industries; but it does not describe the actual working of protection in all the cases in which it is applied in the United States and elsewhere. It is not possible to secure from Congress a tariff law which selects judiciously a few industries and accords them temporary protection during the time that capital and labor are overcoming the initial obstacles. Every section of country, in fact every congressional district, will demand protection for its interests; and by the time that any measure emerges from the legislative mill, it is loaded down with a mass of objectionable details which have to be incorporated in order to secure the votes necessary for its passage. In this way protection has been accorded unwisely to industries that had no prospect of becoming self-sustaining within a reasonable time, and a permanent waste of productive energy has been the result. Moreover, the new industries, when once established, have shown no disposition to give up the favors which were accorded in their infancy; but have fought to retain high duties on their products, even after they have grown into trusts and their competition has come to be dreaded in foreign markets. Temporary protection to a few wisely selected industries is a policy that bears not the remotest resemblance to the course actually pursued by the United States.

Protection to infant industries.

§ 168. It should never be forgotten that so long as a

duty is needed to maintain an industry, protection is causing a diversion of capital from more to less productive fields of investment. It must also enhance the price paid by consumers, although not necessarily by the full amount of the duty. Protection, obviously, can be needed only by an industry in which the domestic cost of production is higher than the foreign; and labor and capital would not embark in such an enterprise if the duty did not raise the price sufficiently to cover this difference. In fact, the demand of the protectionist is usually for a duty "high enough to counterbalance the difference between the domestic and foreign cost," or to compensate for "the higher wages paid American labor." If the domestic cost is ten per cent higher than the foreign, a duty of fifty per cent will raise the price by not more than one tenth — provided that competition exists between domestic producers; very often, however, our manufacturers have combined to exact the last penny permitted by the law. Only when the domestic cost of production falls to the level of the foreign can the tax upon consumers come to an end. At that time, the duty is no longer needed to sustain the industry, and it should be promptly repealed in order to remove a powerful incentive for the formation of a monopoly. If this point is ever reached, the infant industry becomes able to stand upon its own feet, and the labor and capital invested in it can no longer be considered unprofitably employed; but up to this time, every industry that requires protection is supported at the expense of the community, and receives alms in the form of an addition to the price that consumers must pay.

The burden of protection.

§ 169. About 1840, in discussions of the tariff question, protectionists began to appeal for the support of workingmen by arguing that import duties are necessary in order to exclude the products of cheap European labor and to maintain a high rate of wages in the United States; and this contention has ever since played an important part in the debate. There is no doubt that American wages are generally higher than those which prevail in Europe, and this fact is now attributed to the influence of our protective tariff. In considering the validity of this claim, it is important to remember that our higher rate of wages has always existed in the United States from the establishment of the first English colonies, and that, prior to 1789, there was no national tariff to which this superiority could be attributed.

The tariff and wages.

In 1723, for instance, an English official in the province of New York wrote: "North America containing a vast tract of land, every one is able to procure a piece of land at an inconsiderable rate, and therefore is fond to set up for himself rather than work for hire. This makes labor continue very dear, a common laborer usually earning three shillings by the day; and consequently any undertaking which requires many hands must be undertaken at a far greater expense than in Europe, and too often this charge only overbalances all the advantages which the country naturally affords, and is hardest to overcome to make any commodity of manufacture profitable which can be raised in Europe." And, during the early tariff controversies, the protectionists never thought of maintaining that protective duties caused high rates of wages; rather they argued that since wages

Historical data.

were higher in the United States, a tariff was needed in order to enable manufacturers to establish new enterprises and pay the prevailing rates. It could not be argued that the tariff was responsible for the high general rate of American wages until the men who remembered that the higher wages were older than the tariff had disappeared from the scene of action.

Wages depend, as we shall learn in the next chapter, upon the productivity of labor; and that this must be the case will be evident when one asks himself how, except on condition that their labor produced more commodities, the laborers of one country could possibly receive more than the laborers of another. Such a high rate of wages was no obstacle to the establishment of the industries in which this country had the greatest comparative advantages, since in such cases the higher rate of payment was offset by greater efficiency. It was an obstacle, however, to the growth of industries in which the advantages of the country were not so great; and it was on this ground that protection was deemed necessary. The tariff merely enabled the employers who entered the less productive industries to pay the prevailing rates of wages, and it did this by imposing a tax upon the consumers. Undoubtedly, after labor has been diverted into a less productive industry, the continued employment of the persons so engaged, at the existing rate of wages, is dependent upon the duty; and it can become independent only when the enterprise has come to be self-supporting and able to produce as cheaply as foreign competitors. The tariff, then, did not create and does not maintain the general high rate of American wages;

Conclusion.

but it merely enables a small number of laborers to find employment, at prevailing rates, in industries that are supported by taxing the rest of the community. When one considers that less than ten per cent of the labor force of the country is employed in callings that are in any way dependent upon the tariff, it becomes evident that it is absurd to suppose that any benefits accruing to such a small body of workers could possibly raise the wages of the remaining ninety per cent to a point twenty or thirty or fifty per cent above the level that prevails in the various parts of Europe.[1]

Diversification of industry.

§ 170. In most discussions concerning the effect of the American tariff, the protectionist assumes that manufactures could not have been established in the United States without its aid; and he argues that, whatever it may have cost, protection has had the effect of diversifying our industries. This is to claim more than historical facts warrant. In the eighteenth century, in spite of unrestrained English competition and in the face of Parliamentary prohibitions, our people established several important branches of manufactures. In 1791, when Alexander Hamilton made his famous argument in favor of protection, he could say, at a time when national tariff laws had not existed long enough to exert an appreciable influence: "To all the arguments which are brought to evince the impracticability of success in manufacturing establishments in the United States, it might have been a sufficient answer to have

[1] That a tariff is not needed to keep wages in one country above those prevailing in neighboring lands can be seen from the fact that in England, under free trade, wages are higher than in the rest of Europe.

referred to the experience of what has been already done. It is certain that several important branches have grown up and flourished with a rapidity which surprises, affording an encouraging assurance of success in further attempts."

§ 171. At the present day the important question is not the influence which the tariff has exerted in the past, but the policy which the country should pursue in the future. Various causes make it probable that the coming decade will witness a movement toward a gradual reduction of duties. It is not likely that those duties which shelter oppressive monopolies will be maintained at their present level, if at all; and it is possible that freer commercial relations may be established with Canada and other countries. Then, too, within ten years, our exports of manufactured goods have increased from $158,000,000 to $407,000,000; and it is evident that our manufacturers have turned their attention to foreign markets to a greater extent than ever before. They are now learning that our past policy has provoked retaliatory measures from other countries, and that our export trade is likely to be hampered most seriously if our attitude remains unchanged. At the same time they are finding that they no longer need as high duties as they formerly believed to be necessary, so that many of them perceive that even manufacturing industries have more to lose than to gain from the continuance of existing conditions. Although vested interests are so strong that reform of the tariff may prove a slow and difficult process, the present tendency seems to be away from a restrictive and toward a more liberal commercial policy.

The present situation.

FOR SUPPLEMENTARY STUDY

General: HADLEY, Economics, 421–445; NICHOLSON, Political Economy, II, 235–328; SEAGER, Introduction to Economics, 361–384.

Special: BASTABLE, The Commerce of Nations; ROBERTS, Government Revenue; SHAW, The National Revenues; SUMNER, Protectionism; TAUSSIG, Tariff History of the United States.

CHAPTER XII

THE DISTRIBUTION OF WEALTH

I. The National Income and its Distribution

§ 172. The annual product of a nation's industry is obtained through the coöperation of various classes of persons, — employers, laborers, landowners, and capitalists, — each of which claims a share of the national income. Production, therefore, must be followed by a process of distribution, in which the wealth created each year shall find its way into the hands of the different recipients. The nature and results of this distributive process now demand careful study; and, in considering them, we shall have to deal with some of the most important and difficult problems of the science.

The distributive process.

At the outset it should be observed that the annual product of industry does not constitute the whole of a nation's income. Every society possesses a larger or smaller quantity of durable consumer's goods, such as dwelling houses, books, or pictures, accumulated in the past, from which it derives each year a considerable number of enjoyments. All the services that are derived from such possessions constitute a part of the social income. They accrue, obviously, to the owners of the goods; and the manner in which they are distributed requires little further consideration.

Annual product and annual income.

It may be said, however, that laws regulating inheritance exert, from one generation to another, an important influence upon the distribution of this form of social income.

It is of the division of the current product of the nation's industry that the economist usually treats when he studies the distribution of wealth. This consists of both material goods and personal services obtained from the employment of labor and capital; and it will be meager or copious according to the energy and intelligence with which production is conducted, and the natural resources to which the people have access. To a very considerable extent, also, the productivity of current industry depends upon the amount of capital that producers have at their command. Greater skill, a larger number of laborers, and increased zeal will enable a society at any time to increase the products at its disposal; but there are limits to such improvement of the productivity of industry, arising from the fact that modern methods are conditioned upon the employment of capital. With the steam engine, the blast furnace, and the Bessemer converter, the United States can produce more than 15,000,000 tons of steel in a single year; but without the aid of capital there could be no production of this, or any other metal; and, in order to double the product, a large additional investment of capital would be required. The same thing is true, although not always to the same extent, in the production of most material commodities. It is therefore evident that the efficiency of modern industry is conditioned, to a very large degree, upon the amount of capital produced in past years and

Productivity limited by capital.

available for current use. In this manner the present is limited by the past, and the amount of the social income is dependent upon past accumulations of capital.

The income of a society is here conceived of as a certain amount of commodities or services; but the incomes which individuals draw from the annual product of industry must be considered both as definite quantities of economic goods and as definite quantities of value. For in the modern distributive process, the fundamental fact is that goods are produced for the market, and that it is the value of the product, not the product itself, that is divided among the various persons entitled to participate in the proceeds of an enterprise. When a farm is cultivated upon shares, landowner and tenant may divide a certain number of bales of cotton or bushels of wheat; but usually commodities are first sent to market, and the money secured from the sale is the source from which individual shares are derived. Private incomes, therefore, are generally expressed in terms of money.

Value and distribution.

This leads to a distinction which frequently is of great importance. Private incomes may be money incomes, *i.e.*, definite sums of money; or they may be real incomes, which, of course, consist of the commodities and services that money incomes will command. In a single community, where the prices of articles of necessary consumption are the same for all persons considered, the amount of a man's money income is a satisfactory indication of the comfort in which he lives. But between different communities and countries prices of particular articles, and especially of such a thing

Real and money incomes.

as house rent, differ so widely that mere money incomes afford no satisfactory basis for a comparison of the real incomes that people enjoy. This consideration is exceedingly important in dealing with statistics showing the remuneration of labor; for between one country and another, differences in nominal, or money, wages may or may not indicate corresponding differences in the real wages received.

§ 173. Whenever the coöperation of the factors of production is secured in the simplest manner possible, *i.e.*, in cases where all factors are owned by a single man, private incomes depend solely upon the prices obtained for the commodities that the producer has to offer. A farmer, for instance, owning his land and capital, and employing no labor except his own, receives his share of the social income when he disposes of his produce in the market. And for a shoemaker, a tailor, or a storekeeper, similarly situated, the distribution of wealth means nothing more than the establishment of the value of the goods or services that he sells to his customers. If all production were organized in the simple manner just described, the laws of value would be also the only principles governing the division of the social income among the various producers.

Simplest form of distribution.

But production, as we have seen, is usually organized in a far more complex fashion, so that the distribution of wealth involves something more than the simple process of exchange. Employers, landowners, capitalists, and laborers coöperate in the establishment of all large enterprises, each class performing a separate function; and, after the value of

Distribution usually complex.

the product has been determined, it is necessary that a satisfactory division of the proceeds should be secured. Thus the money received from the sale of products is divided up into the landowner's rent, the capitalist's interest, the laborer's wages, and the employer's profits; and four different kinds of income emerge as the result of the distributive process.

§ 174. It is worth while to examine a little further the mechanism by which distribution is accomplished, and the relations that exist between the various classes of participants. The employer, or responsible manager of a business enterprise, is the central figure in the distributive process. He may, and usually does, own some part of the capital invested in the enterprise, but very often borrows a part. The land occupied may belong to him, or may be rented. He may perform clerical work or act as superintendent; but most of the labor, especially that calling for a lower grade of skill, will have to be intrusted to hired workers. With landowner, capitalist, and laborer, the employer must arrange contracts which call for the payment of specified sums for rent, interest, and wages; and the obligations thus assumed must be met, whether the enterprise proves profitable or not. If a surplus remains after rent, interest, and wages have been paid, it belongs to the employer as the gross profits of the business; but everything received in this manner is a contingent income that is dependent upon his ability to market the product at remunerative prices. The employer's capital and the entire proceeds of the year's sales stand as a buffer between the other classes of participants and the chance of loss, so that upon

The employer's place in distribution.

him the risks of the business primarily fall. Landowners, capitalists, and laborers can lose only when the enterprise proves such a complete failure that the employer's investment is wiped entirely out. The laborers, in fact, through mechanics' liens and other preferences accorded by the law, are placed in the position of favored creditors and can seldom lose their wages, even though the assets of a bankrupt concern come far short of meeting the liabilities.

§ 175. We are now ready to examine the forces that control the bargaining between employers and the landowners, capitalists, or laborers, with whom they establish business relations. It will be our purpose to learn what laws govern the amount that must be paid for rent, interest, and wages, and to ascertain under what circumstances a net profit can accrue to a business venture. If these things can be explained, we shall understand the manner in which the proceeds of industry are divided. It will appear that distribution is really a process of valuation, and that the share received by the landowner, capitalist, laborer, or employer, depends upon the value of the contribution which his property or labor has made to the product of industry.

Our problem.

At the outset it will be assumed that free competition exists; so that the value of each commodity tends toward its normal level, and the division of the product proceeds upon a competitive basis. Throughout the chapter we shall find ourselves constantly returning to the great forces of supply and demand, upon which all values depend; in fact, all the laws of distribution are but particular applications of the general principles with which we became familiar in our study of the theory of value.

Competition assumed.

II. Interest

§ 176. A part of the proceeds of industry must, obviously, go to replace the capital consumed in production. Then, in addition to the return or replacement of the funds invested, owners of capital receive an annual income known as interest, which takes the form of a stipulated percentage of the principal. This return must be received not only by the lenders who invest their funds with managers of productive enterprises, but also by any manager who supplies a part or the whole of the capital which he employs.[1] Payment for an actual loan, therefore, is but one form which interest assumes; capital invested by the employer himself must, no less than that of the "money lenders," yield an annual income to the owner.

Nature of interest.

Since money is the medium by which most transfers of capital are made, and the standard by which its value is measured, an investment of capital is often called an investment of money, and interest is frequently said to be a payment for the use of money. Such a choice of terms does no harm if one is careful to remember that in most cases it is other things than money that are actually invested; and that interest is paid for productive capital, whatever its form may be. The money which is said to be invested in a factory is in reality expended in erecting buildings and purchasing equipment; and the investment really consists of these instruments of production, and not of the money by which

Interest not a payment for money.

[1] The income which the employer receives in this way comes to him, not by virtue of his position as *entrepreneur*, but by reason of his exercising the additional function of capitalist.

they were transferred from producers to factory owners. Although this may seem to be a simple matter, confusion has often arisen at this point. It has been proposed to make capital cheap, *i.e.*, to lower the rate of interest, by increasing the quantity of money in circulation; whereas the circulating medium might be increased indefinitely without making instruments of production any more abundant, or lowering the rate of interest that one must pay for their use. Money is a medium for transferring capital, just as a freight car is a medium for transferring wheat; and the way to make capital abundant is, like the way to make wheat abundant, to increase the quantity of the thing transferred rather than to multiply unnecessarily the apparatus employed in effecting the transfer. Not an inordinate number of freight cars, but more wheat; not an endless supply of money, but more buildings, tools, and machines will be needed, in the one case as in the other, to make the supply abundant and to reduce the value.

Rate of interest depends on demand and supply.

§ 177. The rate of interest that capital can command will depend, like the income derived from anything else, upon the conditions of demand and supply. Turning now to the former, we find that capital is demanded by business men who are constantly seeking to extend existing enterprises or to establish new ones. In a country where the natural resources are large and but little exploited, the products obtainable from a given investment of capital will be large, and the demand is likely to be strong; whereas, in an older country that is more fully developed, a smaller product can be obtained, and the demand will be less intense.

So, too, when business is active and profits unusually large, *entrepreneurs* will desire to obtain a larger quantity of capital and can afford to pay a better rate; while a period of industrial depression produces the opposite effect. In all cases the demand will increase if the rate of interest is low; since it is easier, when capital is cheap, to find enterprises in which its productivity is great enough to warrant its employment; whereas, when the rate rises, employers find it impossible to use capital in so many undertakings, and the demand will decline. In every industry, in fact, there is a considerable margin within which capital can supplant labor, if it can be obtained on easy terms; and where labor will be used in preference to machinery if the rate of interest is high (§ 45). When all circumstances are taken into account, it is evident that the demand will vary directly as the productivity of capital,[1] and inversely as the rate at which it is offered.

The supply of capital.

§ 178. It is frequently said that interest is obtained because capital is productive; and this is considered a sufficient explanation both of the fact that interest is paid, and of the rate of payment that is exacted. But if capital could be procured without sacrifice upon the part of any one, and in quantity sufficient to meet the needs of industry, nothing could be obtained

[1] Or, strictly, as the marginal productivity of capital. All parts of the supply are not equally productive. Capital used in enterprises for which the natural resources are greatest or the demand most urgent yields more than in many later enterprises, which it is only just worth while to establish. As a country's supply of capital increases, and the best opportunities are taken, the marginal productivity declines. Everywhere it is the productivity of the least productive unit of the supply, *i.e.*, the marginal product, that determines the importance of any single unit of capital.

for its use; and interest would disappear as a share in distribution. Indeed, people who were anxious to provide for their future would even offer to pay some trustworthy person who would furnish a safe place for storing their savings. Interest is paid not merely because capital is productive, but because it costs something to obtain enough of it to satisfy the demands of business. This leads us to examine the conditions that govern the supply.

Abstinence.

As has been explained elsewhere, the formation of capital requires abstinence, or the sacrifice of the present to the future. The person who lends the sum of $1000, or invests a similar amount of capital in an enterprise of his own, sacrifices a present income for one available only at some future date, — we will suppose, the end of a year. Ordinarily no one would care to do this unless some inducement was offered him as a compensation for his waiting. This is partly because the future is often uncertain, and a future payment of $1000 is not so assured a thing as $1000 now in hand. But it is due also to the fact that, even where it is as certain as death or taxes, a future pleasure or pain is undervalued as compared with a present one. For these reasons a person who would obtain a loan must offer to return at the expiration of the stipulated period something more than the principal which he borrows, and people who consume commodities produced with the aid of a certain amount of capital must pay prices that will allow the employer to recover something more than has been expended for materials and appliances. Future goods are worth less than present, and when one is exchanged for the other, a

premium or bonus must be paid to the person who sacrifices the present for the future. Not $1000 of future income, but $1050 or $1060 will be needed to obtain the use of $1000 of ready cash for the period of a year. The premium required to make the future income equal to the present is interest.

But all capital does not represent equal amounts of sacrifice; it is supplied by different classes of persons, and with different degrees of difficulty. It may come from people enjoying large incomes who can readily save a considerable proportion of what they gain; it may be furnished by persons of moderate means who desire to provide for the future, and would do so even if the rate of interest should fall to a very low figure; and, in the third place, it is supplied by a large number of marginal investors who will furnish more or less capital according to the inducement that is offered. These marginal investors may be wealthy people, or persons of moderate means, whom a high rate of interest will induce to increase their savings, or they may be people of a less provident disposition who would save nothing without a fairly strong and obvious stimulus to thrift.

Capital represents different amounts of abstinence.

In this way it comes about that, although a certain amount of capital might be had for little or nothing, the large supply already invested in business, and the still larger supply that will be wanted to-morrow, cannot be secured except by offering a fair rate of interest. Moreover, it appears that the higher the rate, the larger will be the aggregate amount of capital offered; so that the supply will vary directly as the rate of interest.

Supply varies with rate of interest.

A number of writers in recent years have been inclined to doubt whether any such relation exists between the amount of capital saved and the rate offered for its use. They have perceived that a considerable number of persons would, in any event, endeavor to provide for the future, and they argue that the lower the remuneration received, the more must a man save in order to provide a comfortable income upon which he may retire. They believe that the habit of saving is now so firmly established that the process would continue on about the same scale as at present no matter what the rate of interest might be. This is a comfortable belief for one who advocates policies that are destructive of thrift and prudence; but it overlooks the fact that, while some capital undoubtedly would be accumulated without the inducement of a good rate of interest, a considerable part of our present supply comes from persons who will save more or save less according to the rate obtainable from investments. It also fails to give sufficient weight to the fact that constant saving is needed, not only to make additions to the supply of capital, but also to keep up the present stock. For capital is maintained intact only by constant replacement; and the inducement to replace the buildings, materials, and appliances consumed in productive industry, is in no way different from that required for saving additional capital. In order to maintain the present stock as well as to provide for the growing needs of industry, the savings of the class of marginal investors are required; and so long as this is the case our aggregate supply of capital will vary with the inducements offered to capitalists.

Controversy at this point.

§ 179. The rate of interest, like the price of a commodity, must be such as will equalize the supply and the demand. A given stock of capital cannot command a higher rate than is offered by the marginal producer, who employs such capital as he obtains under conditions of the least productivity. But though this rate may have to be accepted for a short time, it cannot prevail for any considerable period, unless it is adequate compensation for the sacrifices incurred by the marginal investor, to whom a considerable premium must be offered in order to induce him to exchange present goods for future. On the other hand, if a given stock commands a rate that is greater than the marginal sacrifice required to obtain it, the supply will gradually increase until its diminishing marginal productivity lowers the price to a point that no more than satisfies the marginal investor. Thus the normal rate of interest is such as will cause an equilibrium of supply and demand, and depends, like the normal value of a commodity, upon the demand of the marginal consumer and the sacrifices of the marginal producer.

Equalization of demand and supply.

§ 180. So far we have considered nothing but the return received for productive capital, but we must now examine briefly two other forms that interest may assume. Owners of certain durable consumer's goods, such as dwelling houses, may lease their property to tenants and obtain a stipulated annual income from the investment. In such transactions present goods are exchanged for future, just as truly as in a loan of productive capital; and the annual income secured from property of this character will be determined in precisely

Other classes of loans.

the same manner as the rate paid for capital used in production. Loans are sometimes made for personal expenditure and not for the support of productive undertakings. These are all too numerous, but are generally for small amounts, so that their aggregate mass is comparatively unimportant when contrasted with the enormous amounts of capital employed in industry. So far as they are subject to the law of competition, the rate of interest upon such loans is determined in the manner described in the last paragraph; but in many cases the ignorance or necessities of the borrower enable the lender to exact extortionate terms.

§ 181. With all investments of capital, risk exercises an influence upon rates of interest. Manifestly, when there is a prospect of a loss of both principal and interest, a very large premium will be required to equalize future goods with present; and, in proportion as this factor can be reduced or eliminated, the amount of the premium will tend to decline. Risk, indeed, is not to be considered a factor that is independent of the principles already discussed, but it is one of the circumstances that affect the supply of capital offered at any given rate of interest. It is important enough, however, to require express emphasis; and an unusually high rate of interest regularly points to an unusual risk.

Risk.

§ 182. It is a familiar fact of experience that in a progressive country the rate of interest tends gradually to decline. This is due in part to the increase of wealth, which enlarges the supply of capital and reduces its marginal productivity. In a newer country, like the United States, where natural resources are

Tendency of interest to decline.

not so fully exploited, many opportunities exist for the remunerative investment of capital which cannot be equaled in an older country like England or France. Then, too, as a country becomes more fully developed, industries can be established upon a basis approved by experience, and there is less necessity for taking unknown risks. This makes business less speculative, and tends to reduce the rate of interest. In the United States the rate paid for capital is always high in a newly developed section, running as high as from twelve to fifteen per cent. The growth of wealth and the inflow of foreign capital gradually reduce interest to six or eight per cent; and there it is likely to remain until the district becomes largely independent of outside capital, which can command five per cent at home and will not be invested elsewhere unless higher rates are offered. In the leading countries of Europe, the rate is materially lower than in the United States; and it is for this reason that so much foreign capital has sought investment on this side of the Atlantic.

Short- and long-time loans.

§ 183. Although the two things are not different in their essential character, something should be said concerning what are known as short- and long-time loans. The former are such loans as bankers make upon call, or for brief periods ranging usually from one to three months; the latter may be represented, for present purposes, by such an investment as a five- or ten-year loan upon real estate, secured by a mortgage. Bankers' loans are sought by business men who constantly incur liabilities that must be met before returns can be secured from their investments. They represent, in a peculiar sense, a demand for money or credit needed upon

short notice to maintain the solvency of the borrower; so the rate that they command will fluctuate according to the conditions of what is called the money market. At certain times when the cash reserves of the New York banks are very large, money may be obtained upon call for as little as one per cent; but, upon a day's notice, some unfortunate turn of affairs might easily raise the price of call money to ten, twenty, or thirty per cent. On October 29, 1896, the rate was ten per cent when business opened in the morning; by noon it had jumped to fifty per cent annual interest, and before night it stood at eighty or one hundred per cent. On the other hand, the demand for mortgage loans is in no way influenced by the vicissitudes of the money market; and the interest rate may, for a generation or more, remain fixed at five or six per cent. Even with short-time loans, it is only the daily fluctuations that depend upon the plenty or scarcity of ready money; for, if yearly averages are studied, it appears that the rate commanded by prime commercial paper, like the rate upon mortgage investments, gradually declines as a country's wealth and capital increase. In 1830 the Second Bank of the United States could obtain in Philadelphia and New York seven per cent interest upon its ordinary discounts, for which, to-day, a rate of five per cent would be highly satisfactory to a banker. The decline has been brought about by the same causes that have reduced interest upon mortgages from six or seven to four or five per cent in the same communities. This fact shows us that short-time and long-time loans are governed by the same underlying conditions, and that they are, at bottom, transactions of precisely similar character.

III. Wages

§ 184. Wages are the portion of the product of industry received by the persons who perform labor, skilled or unskilled, mental or physical. In some of the higher occupations the remuneration of the worker is called a salary, but it does not differ in its economic characteristics from the wages of the common laborer. Persons who are without the means necessary for establishing independent enterprises must sell their services to employers and become hired wage-earners; but wages may be received also by small independent producers who perform their own labor, and by an employer, large or small, who does any of the routine work of his establishment in order to avoid hiring an additional man.

Wages defined.

§ 185. Hired laborers may receive either time or piece wages; the former being paid for each hour or day that labor is performed, the latter being adjusted to the amount of work done. With a time wage may go a tacit or express understanding that a certain quantity of work shall be accomplished, and piece wages may be computed upon a basis that will enable the average worker to earn about so much per day or week, so that the difference between the two methods is not always so great as might appear at first sight. Yet, in general, the piece system gives the workman a somewhat greater stimulus to turn out a large product. It happens, very often, that both methods of remuneration coexist in the same industry; and, in such cases, it will usually be found that the labor cost of each unit of product is about the same. Indeed, competition between employers can pro-

Time and piece wages.

duce no other result, because an establishment that produces at a considerably higher labor cost than rules in the rest of the trade is likely to be forced out of the field.

Labor cost.

This leads to the further consideration that labor cost is a very different thing from rates of time wages. A high daily or weekly wage indicates generally [1] a high standard of efficiency, which makes the labor cost no higher than it is in other districts or countries where lower rates are paid. In point of fact the total cost of production is likely to be lower where high-grade labor is employed; for the increased wages are made good by the greater efficiency, while the product of a given plant is increased with a corresponding reduction of the fixed charges that enter into each unit of the output. In comparing daily or weekly wages paid in the United States with those which prevail in other lands, this consideration is of the very greatest importance.

Rate of wages depends on supply and demand.

§ 186. The rate of wages represents the value which labor possesses under the existing conditions of supply and demand, and is determined in the same general way as the value of anything else. There are, even within the same district, almost as many grades of labor as there are kinds of commodities; so that the laboring class is divided into various groups, each possessing a particular kind or degree of ability and receiving a different remuneration for its services. We must now investigate the forces that govern

[1] If no tariff exists to draw labor into some industries where it is less productive than in the others, a high rate of wages always points to high efficiency.

the demand for labor and the supply of this agent of production.

§ 187. The demand for any particular grade of labor will depend on the value of what it can produce. An independent farmer or artisan who sells the product of his own hands can, obviously, receive for his labor no more than the value of his goods; and the same thing is true of the hired workman, under the operation of a healthy competition, although the complexity of the distributive process makes this fact less easy to perceive. An employer can afford to pay no more than a workman adds to the productivity of the farm or factory, and, therefore, the demand for any grade of labor must depend upon what its productivity is considered to be. A skillful superintendent who can secure the maximum output from each man or machine in a factory is the most productive person in the employ of the establishment, and his services will be in demand at a high salary; while the workman of inferior intelligence or industry, unskilled in any trade, produces little and is wanted, if at all, only at the lowest wages. These, of course, are the two extremes; and between them there may be, in any locality, 100 or 1000 different classes of laborers representing as many grades of productivity and subject to corresponding differences in demand.

Demand for labor.

Bearing in mind that different grades of labor will be demanded only at wages that correspond to their varying degrees of productivity, we must next study a little more closely the conditions that control the demand for any single grade of workmen. It is a fact of experience that a few laborers of the same class, all of

Demand for various grades of labor.

whom may compete for the same kind of employment, will find that their services are in demand at a higher price than could be obtained if their numbers should suddenly be increased. This is because, in any market, the productivity of any kind of labor gradually diminishes as the supply is enlarged. A few workmen, even though unskilled, when employed at a few places where the natural resources are the greatest, will create a larger product than additional laborers of the same class who have to be used in industries for which the conditions are less favorable. Then, too, on each farm or in each factory only a certain number of men are needed in order to secure the maximum efficiency; and beyond that point, additional hands will not yield a proportionate increase of the output — a condition due to the variation of productive forces (§§ 43–45). It follows, necessarily, that the wages offered the marginal workman must decline as the supply of workmen increases.

Demand varies inversely as price.

It is evident, moreover, that the demand for the services of each class of workmen, depending, as it does, upon the value of the product, must vary according to the price that is asked. A few men of a certain grade of skill might find a few employers, enjoying the greatest natural advantages, who could afford to pay the very highest wages. A larger body of workmen must turn to other occupations, or must add to the number employed in the most favored industries; and in either case the productivity of the marginal laborer will decline. The result will be that the larger supply of labor can be taken off the market only at a lower rate, by employers whose situation does not permit them to offer as much as

had previously been paid. Each increase of numbers, in fact, reducing the marginal product,[1] will reduce the rate still further so that the conditions of the labor market resemble those which rule in other markets. A high price attracts but few employers, while low rates steadily increase the demand until it becomes large enough to absorb the supply. With labor, as with other things, the demand will vary inversely as the price.

§ 188. Turning now to the conditions that govern the supply, we must observe that labor, like capital, has a cost of production, and that an adequate supply cannot be had unless the remuneration of the workman is sufficient to cover the cost of his services. For any given class the cost of production means the standard of living that the laborers are determined to maintain; *i.e.*, the quantity of the necessaries, comforts, or even luxuries that must be offered in order to obtain an adequate number of workmen at a given time, and to induce them to marry and perpetuate the supply of labor. From class to class this standard shows variations that sometimes are exceedingly great and produce material differences in wages.

The supply of labor.

Laborers of the lowest intelligence and industry are

[1] This does not mean that, as time passes and population increases, the marginal laborer produces less and less, so that the rate of wages steadily declines. Such an inference is as incorrect as the dismal conclusion sometimes drawn from the law of diminishing returns to land (p. 81). While the marginal productivity of a small number of laborers must *at any time* be greater than that of a larger number, improvements in production may, and probably do, enable the additional workmen supplied by a growing population to produce as much as the marginal laborers of former periods. In progressive countries, at least, this is what occurred during the nineteenth century.

likely to show little forethought in assuming the responsibilities of marriage, with the result that an adequate supply of such services as they are able to perform can be had at a very low cost — which, if conditions are unfavorable, may be no more than is necessary to keep soul and body together. If immigration is practically unrestrained, as in the United States, the cost of producing this grade of labor may be not that of rearing a family in this country, but the cost in some of the poorest districts of Europe. It is in such strata of the laboring population that the struggle for existence is fiercest, and the pressure of numbers upon the available means of subsistence most intense. Above this lowest class come successive grades of laborers, possessing greater intelligence, skill, and self-control, who insist upon having something better than the bare necessities of physical existence, and who will not rear large families of children unless favorable conditions of living are reasonably assured. At the top of the pyramid are the smallest classes, consisting chiefly of brain workers, of whom an adequate supply cannot be obtained unless the remuneration is sufficient to enable a man to give his children the best of commercial, technical, or professional training and all the other advantages which he himself has enjoyed. The desire of each class to maintain its position and educate children to a station at least as good as that of their parents, is the factor that determines the cost of each grade of labor.

The supply of the various classes of laborers.

From what has preceded, it follows that the laboring population is divided into a large number of grades, between which little direct competition can exist, because members

of a lower class lack either the general intelligence or the special training required for the work performed by a higher class. Labor-saving machinery often enables an inferior grade of workmen to compete for work formerly done by a superior, and thus destroys the line of demarcation between the two classes. But, except in such cases, there can be little direct competition; and this is increasingly true as we pass from the bottom to the top of the pyramid. Indirect competition, however, is much more active, since self-sacrificing parents can educate their children for the higher callings in life, provided that a system of popular education affords the necessary opportunities. It is obvious that the children of a higher class are likely to receive a better start in life than those belonging to a lower; but ability and character are not the exclusive possession of the offspring of any one class, and a good system of public schools may enable the poorest boy to rise to the highest and most remunerative position.

Competition between classes.

It must now be explained that the standard of living, and, therefore, the cost of production, is not precisely the same for all the laborers of a given class. Some workmen will be satisfied with less than others of no greater efficiency will demand, so that a little labor of any particular grade can be obtained for less than must be paid for a large supply. For each class there is a minimum supply price, which must be paid if any workmen are to be obtained; and beyond this point the supply can be enlarged only by raising the price that is offered. It is evident, therefore, that the supply of any grade of labor will vary directly with the rate of

Supply of labor varies with rate of wages.

wages, rising as the rate is increased and falling as it decreases.

§ 189. We have seen that the demand for labor depends on the value of the product of the marginal workman, and varies inversely as the price. It is evident, also, that the supply, depending on the cost of obtaining the services of the marginal laborer who has the highest standard of living, will vary directly as the remuneration offered. The normal wage fixed by the forces of demand and supply must be such a rate as will equalize the two forces, and call out a sufficient supply to meet the demand at the price which the marginal producer can pay. The value of labor, therefore, under conditions of healthful competition, is determined in the same manner as the value of other things.

The normal wage.

It should be observed, however, that, since human lives are involved, the supply of labor does not adjust itself readily to the conditions of demand, and that it can be decreased only with the greatest hardships, and increased only by immigration or the gradual growth of population. These peculiarities will receive due consideration in the following chapter, but for the present it is sufficient merely to call attention to them. Freedom to migrate makes it easy to reduce the supply of labor in any market when the value falls below the standard of living of the marginal workmen, and unrestricted immigration renders it more difficult to adjust supply to market conditions. Public education and all influences that tend to elevate the intellectual and moral condition of the laborer or to increase his efficiency enable him to compete more effectively for a wage that will make it possible to

Labor is a peculiar commodity.

maintain his standard of living. Yet, after all allowance is made, it remains true that labor differs in important respects from other commodities.

The student may have noticed that our discussion of the law of wages has proceeded upon the assumption that the family is the economic unit, and that the remuneration of any class of laborers must be adequate to insure a future as well as a present supply of workers. Whenever the wife and children are able or willing to find employment, in the hope of increasing the earnings of the family, it usually happens that, before long, the remuneration of the father decreases. This is because it costs less to secure his services and to insure a future supply of workmen like him, when he is no longer obliged to support his entire family out of his earnings. We see here, also, a reason why the wages of women are likely to be less than those of men, even when they perform the same work.[1] A woman, in a majority of cases, does not have the burden of supporting an entire family, and her services can consequently be obtained for less than men must, upon an average, receive. Considerations like these are of great importance in dealing with problems connected with the employment of women and children.

The family is the economic unit.

IV. Rent

§ 190. When competition prevails, the normal value of any commodity must be high enough to compensate

[1] Frequently the work is not the same, even when it appears to be so upon first examination. The most efficient woman may be lost to the employer by her marriage at any time; and she is actually worth less than a man whom the employer can expect to retain.

the marginal producer for the labor and capital required to procure the most costly portion of the supply. Wages and interest must be received by even the marginal producer, and more than this competition will not allow him to obtain. But other producers, who, on account of superior situation or greater ability, are able to supply the commodity for less than the marginal cost, find that a surplus is left on their hands after they have paid for all the labor and capital that have been expended. The amount of this surplus will depend, obviously, on the degree of superiority that the recipient enjoys over the marginal producer. In industries where great differences exist between the lowest and the highest costs of production (§ 53), a very considerable part of the total product may be absorbed by the superior producers; while the surplus received by the more favored establishments will be small if there is but a slight difference between the least cost of production and the greatest.

Differential gains.

The surpluses received by the more favored *entrepreneurs* may arise from the possession of superior natural agents of production or from the exercise of superior ability in organizing or conducting their enterprises. In the former case, the surplus would be called rent, which may be defined as *the income that accrues to the owner of a natural agent of production;* in the latter, it would be considered profits, or *the reward to the ability and enterprise of the successful entrepreneur.* Both of these shares in the product of industry now claim our attention, and will be treated in the order indicated above.

Rent and profits.

§ 191. The natural agents of production from which incomes are derived may be fertile soils, well-situated city

lots, useful water powers, rich mines, or valuable forests; but in all cases access to them depends on the control of particular tracts of land, so that we may, for the sake of convenience, speak of rent as the return received by the owner of land. To employ a definition which has attained considerable currency among economists, rent is "the value of situation with its natural gifts and all the rights and privileges pertaining to the occupancy thereof." In the sense in which the word is here employed, land is sharply contrasted with the improvements, such as buildings, fences, walks, ditches, dikes, and fertilizers, which man places in or upon it. All of these things are products of human labor, and, in so far as they aid production, are but special forms of capital, for which interest, not rent, is received by the owner. Rent, as a category in distribution, includes nothing but the return obtained from a natural agent of production.

Rent defined.

Interest and rent are sometimes confused by reason of the fact that the selling price of any tract of land is always computed by capitalizing at the current rate of interest the annual return which the owner is able to secure from it. If a city lot is so advantageously situated that it yields a rent of $5000, while the current rate of interest is five per cent, it will command a price of $100,000. But this fact throws no light whatever upon the reasons why an annual rent of $5000 can be obtained, and it is the annual rent that needs to be explained. Obviously when land is bought and sold, people will compare the rent with the interest derived from investments of capital, and will adjust the purchase price accordingly. Our theory of rent, however, must explain why rent is paid

Rent and interest not to be confused.

and what determines its amount, and not whether the selling value of land is sixteen, twenty, or twenty-five years' purchase.[1]

Value of land depends on demand.

§ 192. Capital and labor receive their appropriate shares of the proceeds of industry not only because they add something to the product, but also because they must have adequate remuneration if a sufficient supply is to be obtained. Land, however, is not the product of human effort, and the payment of rent is not necessary in order to insure a supply adequate for the needs of industry. The supply of land is virtually a fixed quantity[2]; and the rent that it bears depends, therefore, on the conditions of demand rather than on those of supply. Like any other thing the supply of which is definitely fixed, the value of land depends on what people will give for it, not on the cost of producing or reproducing the supply.

Rent of building lots.

§ 193. With land used for residential purposes the forces governing rent may be studied in their simplest form. When the handful of Dutch colonists who bought Manhattan Island from the Indians erected their first dwellings, a house lot, even in the section adjoining the Battery, could have had almost

[1] Twenty-five years' purchase would mean a purchase price equal to twenty-five times the annual rent. This would give a four per cent return upon the investment.

[2] There is, of course, a certain amount of "made land" which has been reclaimed from the water; but it is so small in comparison with the total land surface of the globe as to be practically a negligible quantity. Moreover, unlike the supply of labor or of capital, land once reclaimed generally does not need to be continually reproduced by the further expenditure of human effort.

no value, because the supply was ample and the demand insignificant. But as the population of the island grew to thousands, then scores of thousands, and finally hundreds of thousands, the supply of land could be but slightly increased by reclaiming marshes or sites along the water front,[1] and the value of building lots steadily rose. That sites on Fifth Avenue which in 1626 were worth nothing command to-day a princely rental is due to no other cause than the pressure of an increasing demand upon an inelastic supply of land.

Land used in production.

And with land used in production the case is the same. The demand for agricultural land or for lots on Broadway comes from men who wish to establish business enterprises, and the price offered will depend on the facilities which the particular site affords. If the normal price of wheat is eighty cents per bushel, and the fertility or advantageous location of a farm enables the producer to place his grain in the market at a cost of not more than seventy cents, the landowner can obtain a rent of ten cents per bushel.[2] On the other hand, land on which wheat cannot be raised at a smaller cost than eighty cents per bushel will yield no rent, and will not be cultivated unless it can be had for nothing. Similarly the rent of a factory site will be measured by the extent to which the situation and other advantages reduce the cost of production below that of the marginal

[1] The original area of Manhattan Island was about 10,000 acres; and not more than 2500 acres of "made land" have been added to this.

[2] If each acre of the land produced twenty bushels, the rent would be $2 per acre; and, if the rate of interest were five per cent, the selling price of the land would be $40.

producer. With lots occupied by stores the main consideration is the number of customers that can be reached; for it is evident that, by doing a large volume of business, many of the expenses are made proportionately less, and that the savings thus effected measure the rent paid. If the farm or factory site or city lot happens to be occupied by the owner instead of by a tenant, the savings accrue to his benefit, so that he obtains a rent just as truly as if he had leased his land to another person.

Land used for purpose that yields highest rent.

When competition prevails, each tract of land will normally be used for that purpose which will enable it to yield the highest rent. Fertile land adjacent to a valuable water power cannot be cultivated if it is wanted for a factory site, and arable land on the outskirts of cities must be cut up into building lots as fast as the demand for dwelling houses increases. Within a growing city, business encroaches upon first one and then another section that has been used for residential purposes; while the choicest sites pass out of the hands of manufacturers or wholesale dealers, and are used for office buildings or for department stores. In all of these cases we perceive the effects of an increasing demand which raises the rents of the most favored tracts of land.

Rent and diminishing returns.

§ 194. We must now take account of the fact that the prices which producers can offer for land are influenced by the operation of the law of diminishing returns. If the returns to labor and capital invested upon a given tract increased proportionately until the point was reached at which no addition could be made to the product, industry would be conducted

upon a few most favored sites until this absolute limit of productivity were reached. A little land of the next inferior quality would then be utilized, the marginal cost of production would necessarily rise on account of the inferior conditions under which the additional supply of each commodity must be obtained, and the superior lands would begin to bear a rent proportional to the advantages which they afforded as compared with lands of the second grade. If this were the actual case, rent would be due simply to differences in the fertility or situation or other qualities of the various tracts of land that producers were compelled to use.

But from our study of the law of diminishing returns (§ 43) we know that the product obtained from a given tract cannot be increased proportionally by investing additional labor and capital after a certain point has been reached. From this it follows that rent would be paid even if all land were equally productive, provided that the demand could not be satisfied without investing labor and capital beyond the point of diminishing returns. This may be shown by an assumed case.

Suppose that a certain community has supplied itself with wheat by cultivating 1000 acres of the very best land, all equally productive, from which 15,000 bushels were obtained at a cost of $5000 for capital and labor. The cost of production would be 33⅓ cents per bushel, and this would be the normal price of wheat. But the growth of numbers now increases the price obtainable for 15,000 bushels, so that additional labor and capital are invested in this branch of industry. Accordingly $2000 more is invested in cultivating the best lands, **Illustration.**

already in use; and it is found that, as the investment increases from $5000 to $7000, the product rises from 15,000 to not more than 20,000 bushels. Evidently the additional 5000 bushels have been obtained at a cost of $2000, or 40 cents per bushel, on account of the operation of the law of diminishing returns; and the price of wheat must advance to this figure, if the supply is to remain as large as 20,000 bushels.[1] At this new price, it would be possible to bring into cultivation a second grade of land upon which $2000 of capital and labor would produce 5000 bushels, as much as could be secured by the additional investment upon the superior tract. Thus the operation of the law of diminishing returns would extend cultivation from the better to the poorer lands long before the absolute limit of productivity of the former had been reached.

Illustration *(continued).*

In this illustration the owners of the best grade of wheat land will receive a rent as soon as the demand for wheat forces the investment of capital beyond the point of diminishing returns. Whether the additional supply is obtained by added investments upon the older land or by bringing new into cultivation, the rent arises from the facts that the marginal cost has advanced to 40 cents, and that 15,000 bushels can be produced upon the more favored tract at a cost of 33⅓

[1] The question may be asked, why need the price advance so far as 40 cents? The 20,000 bushels now produced cost but $7000, and a price of 35 cents will cover the average cost of production. But with wheat at 35 cents, producers would find it more profitable to produce 15,000 than 20,000 bushels. The former would cost $5000 to produce, and would sell for $5250, yielding a rent of $250 above their cost. This surplus would be thrown away if $7000 should be expended in raising 20,000 bushels which would sell for no more than $7000.

cents. If the demand continues to rise, the marginal cost, either of added investments upon the better lands or of cultivating a still inferior grade, would once more increase, and rents would advance to a higher figure. In all cases, it is the law of diminishing returns, and not the fact that the absolute limit of productivity is reached, which forces up the marginal cost of production and enables those persons who cultivate superior lands to gain a surplus, or rent, over and above what they have expended for labor and capital. And this is as true of factory sites or city lots as it is of land used for agricultural purposes.

It appears, then, that rent emerges as a share in distribution as soon as the demand for the products of the land becomes so great as to make it profitable, and therefore necessary, to invest labor and capital upon the best tracts beyond the point of diminishing returns, or to resort to inferior situations. If the former course is followed, the amount of rent is measured by the difference between the product of the earlier and the later, or marginal, investments upon the same land; if the latter is adopted, rent may be measured by the difference in the productivity of investments upon better and upon poorer grades of land. In both cases it arises from the fact that the various parts of the supply are produced at varying costs, and that the earlier and more productive investments yield a surplus over the labor and capital expended.

Conclusion.

§ 195. It follows from what has already been said that rent, even a high rent, is not a cause of higher prices, but is caused by them. If the demand for a commodity exceeds the supply that can be obtained under the most

favorable conditions without pushing investments beyond the point of diminishing returns, the marginal cost of production and the normal price must rise. Before this occurs land can command no rent, since an eligible location can be had for nothing; after it happens, the surplus earnings of the investments on superior lands fall to the landowner, but *as a result* of the higher prices. This proposition has proved a stumbling block to many students, and seems to be an affront to common sense. Every business man knows that his rent figures among the expenses that must be met out of the proceeds of his enterprise, and from this fact he often infers that it is a factor in the marginal cost of production upon which the normal price of a commodity depends. It is not to be doubted that a man who hires a lot of land must recover the rent out of the price received from his goods; but the proposition is that the price which he receives is not affected by that fact. He agrees to pay the rent because he considers that the advantages of the location will enable him to do such a large business, or do the same amount at such a reduced cost, that he can afford to pay what the landowner demands. If his rent were remitted, he would not sell his goods for less, since the demand warrants the present price, and supply and demand would not be equalized at a lower. If, through a mistake, he agrees to pay more than the price of his product enables him to recover, his only remedy is to seek a less expensive location; for the competition of other producers will not allow him to raise his prices.[1]

Rent not a cause of high prices.

[1] A manufacturer of clothing who locates his establishment in New York does not expect to charge a higher price because his rent is higher

§ 196. Unlike interest and wages, rent is not a payment for sacrifices which the recipient makes in order to assist production. The landowner neither produces his land, nor, as landowner, assists in the active conduct of industry, although he may, as capitalist or laborer, be actively employed and suitably rewarded for such efforts. For this reason rent has been termed an unearned income, and the justice of allowing private individuals to receive it has been called in question. This subject will require further attention when we discuss the merits of what is known as the single tax; for the present, we must content ourselves with pointing out that great care should be observed in applying the proposition that rent is an unearned income.

Rent an unearned income.

The landlord, of course, does not produce his land and does not labor in order to obtain his rent. Yet if he has been a pioneer in a new country, the increased value of his land after a new and prosperous community grows up about him, may be regarded as no more than an adequate compensation for the labors and hardships of earlier days. The capitalist who develops a suburban district and induces people to purchase house lots from him, takes considerable risks when he invests capital in the improvements that are needed to attract customers. At present, a part of his remuneration from such ventures comes from the

A needed caution.

than it would have been in a smaller city; in fact, competition of producers in smaller cities would not enable him to charge more. He locates in New York, and agrees to pay a higher rent, because the advantages which that city affords for his industry enable him to produce his goods cheaply and to pay his rent while selling at the same price as competitors in other cities.

increase of land values that will accrue to him if his plans are successful. It cannot be admitted, therefore, that all increase in the rental value of land is to be considered an unearned income, in the sense that it is in no way the reward for services or sacrifices of the recipient.

Urban land values.

Yet in all progressive urban communities, it cannot be questioned that the steady growth of population increases the rental value of city lots without effort or appreciable risk on the part of the owners. As John Stuart Mill observed, "The ordinary progress of a society which increases in wealth, is at all times tending to augment the incomes of landlords; to give them both a greater amount and a greater proportion [1] of the wealth of the community, independently of any trouble or outlay incurred by themselves. They grow richer as it were in their sleep, without working, risking, or economizing." In the city of Boston, for instance, the assessors' valuations show that, between 1888 and 1903, the total site value of land increased from $328,000,000 to $594,000,000 on account of the steady rise in the annual rent that it would yield; and it would hardly be claimed that this enormous increment of value was offset by equivalent services rendered or risks incurred by the landlords.

Final considerations.

Finally, it should not be forgotten that the increased rent which land bears as a result of social progress can be considered an unearned income only for the original owner, and not for a subsequent purchaser. A man who pays $100,000, accumulated

[1] In a subsequent chapter (§ 223), we shall see that it is by no means certain that landlords receive "a greater proportion" of the income or wealth of the community.

out of the past earnings of his labor and capital, for land that yields an annual income of $5000, cannot be said to enjoy an unearned income — at least in the ordinary meaning of that term. In respect of the future increase of the rent which his land will bear, his situation will be different; but any income acquired by paying its capitalized value is not to be considered unearned.

V. Profits

§ 197. We have already seen that in any industry the superior establishments supply the commodity for less than the marginal cost of production; and that, for this reason, they secure a surplus return over and above the amount expended for labor and capital. When this superiority is due to the fact that the business has been organized and conducted with exceptional skill and good fortune, the surplus falls to the *entrepreneur* and is to be regarded as the profit that accrues to his skill and enterprise. Although it resembles rent in many respects, it can in no sense be considered an unearned income.

Profits.

As the term is here employed, profit means the net proceeds of an enterprise after all obligations have been met and a suitable remuneration has been received by the labor and capital invested. It is to be distinguished with care from the gross profits of a business which will usually include interest upon the capital or wages for the services of the manager. Profits are the reward purely for the risk and enterprise of the man who assumes the responsibility of establishing and conducting a business undertaking. Such a person

Gross and net profits.

engages to pay stipulated sums for rent, interest, and wages even though his books show a loss at the end of the year; and upon him the dangers of failure primarily fall, since his creditors can lose only when the results have been so disastrous as to more than wipe out the *entrepreneur's* own capital. Unsuccessful business men fail to meet their obligations and, becoming bankrupt, are constantly being forced out of the field of industry. By this process inefficient men are eliminated, and the control of labor and capital is placed in the hands of those who can employ them to the best advantage. Risk, therefore, is a very important factor in the organization of industry, and the person who assumes this burden must be suitably rewarded.

Profits the remuneration for enterprise.

At present the reward which lures men to exchange the assured income of the hired laborer or lender of capital for the uncertainties of business management is the profit that may be gained in case goods can be produced for less than the price normally obtained for them. Upon his ability to produce a commodity for less than it costs the marginal producer to make it, the success of the *entrepreneur* depends; and though nothing is guaranteed him, his gains may be enormous. To some men the mere excitement of such a venture appeals strongly, while with others the greater freedom of the *entrepreneur's* position or the love of mastery is the stronger consideration. But without the prospect of a substantial gain in case of success, no one would exchange the assured income of the laborer or capitalist for the hazards assumed by the active business manager.

It will be observed that we have assumed that the marginal producers receive no profits, and obtain merely current rates of interest and wages for such capital and labor as they themselves supply. Their incomes are often called profits; but when this is done, it is necessary to apply some qualifying adjective to the profits obtained by employers of superior ability, and to call the latter pure or net profits. In this discussion, however, we shall apply the word "profits" only to the surplus earnings of superior producers, and shall consider that marginal producers receive only such interest or wages as they may earn. That they can obtain nothing more is due to the fact that, although a man will not embark in an enterprise without the prospect of such rewards as superior producers obtain, he will be likely, after his investment has once been made, to continue in the business even though he receives nothing more than ordinary interest and wages. The result is that, at a price which covers the marginal cost for capital and labor, a sufficient supply will be furnished to meet the demand, so that the normal price cannot be high enough to yield a profit, in the sense in which we employ the term, to the marginal producer.

Marginal producer receives no profits.

The reason why marginal *entrepreneurs* will continue to produce goods upon terms that would never have induced them to establish their undertakings, is not difficult to explain. Capital once invested cannot be withdrawn without more or less loss, and it may be better to receive a normal rate of interest than to lose part of the principal; moreover, if a considerable amount of the capital has been borrowed, the closing of

Reasons for this fact.

the doors of the factory might mean bankruptcy. But in addition to this, it should be observed that an *entrepreneur* who to-day is receiving nothing more than ordinary interest and wages hopes for better times; and it happens not infrequently that increased exertion on his part, or a favorable turn of fortune, places him in a position where he is no longer a marginal producer and begins to receive profits. Then, too, so long as he can live upon the interest and wages that he obtains, the average man seems to prefer to conduct a business of his own rather than to become a hired laborer. These reasons, with others that are less important, explain the fact that an adequate supply of goods will be forthcoming at a price that leaves no profit to the *entrepreneur* who is on the margin of production.

The amount of profits.

§ 198. Obviously the amount of profits received by the more favored establishments depends on the degree of superiority which they enjoy over the marginal producer. This advantage may arise from greater organizing and financial skill, which often make all the difference between a profit and a loss upon a year's transactions. The possession of superior patents may account for the ability to produce at a lower cost; for, as Mr. Mill remarks, "If the value of the product continues to be regulated by what it costs to those who are obliged to persist in the old process, the patentee will make an extra profit equal to the advantage which his process possesses over theirs." Then, too, it cannot be doubted that mere good fortune is an important factor in determining the amount of profits that an *entrepreneur* receives in any particular year, although it cannot account for

the success which many establishments achieve over long periods of time. Finally, industry and integrity count as heavily, here as elsewhere, in favor of the persons who possess these cardinal virtues; and they have a commercial value that is despised by no one who has studied the conditions of permanent business success.

§ 199. The profits of the *entrepreneur*, unlike interest and rent, are usually of a personal nature, and often of a decidedly temporary character. They frequently depend upon the life and health of a single man; and even when caused by less transitory advantages, they can be preserved only at the price of eternal vigilance. Success, itself, may destroy them since it may induce a feeling of security and lead to a relaxation of the efforts upon which its own continuance depends. Then, too, fresh talent and more youthful energy are constantly invading the field, inefficient producers are continually forced out of the business by such competition, and the marginal cost of production steadily falls. Efficiency that yields a large profit to-day, may to-morrow give an establishment but a slight advantage over the marginal producer; and when competition prevails, nothing can be considered assured except that it is always necessary to keep abreast of the latest developments in the industry. In this respect profits differ, to a marked degree, from the surplus which goes to the landowner in the form of rent.

Profits a personal income.

It follows from what precedes that profits are a surplus of wealth saved by the superior managers of industry in the process of producing a commodity which would have required a larger expenditure of

Profits a surplus.

labor and capital under less efficient leadership. They are obtained by selling goods at prices that do not exceed the marginal cost of production, and, like rent, do not affect the value of a commodity. Prices could be no lower, but labor and capital would be wasted, if there were no *entrepreneurs* of an ability superior to that of the marginal producer. For this reason, when competition exists, "anger at the great captains of industry on account of the pure profits which they acquire is not only groundless, but insane. Rather it is the stupid and unsuccessful undertakers who deserve blame, sinking capital and starving laborers."

FOR SUPPLEMENTARY STUDY

General: HADLEY, Economics, 264–335; MARSHALL, Economics; SEAGER, Introduction to Economics.

Special: CARVER, The Distribution of Wealth; CLARK, The Distribution of Wealth; TAUSSIG, Wages and Capital.

CHAPTER XIII

THE LABOR PROBLEM

I. The Labor Contract

§ 200. The hired laborer sells his services to an employer for a stipulated wage. In the view of the law, his labor is his property, and the agreement by which he disposes of it is similar to any other contract. Legally, as well as economically, labor is a commodity which the possessor has a right to sell in the best market obtainable. In the United States both the federal and the state constitutions contain various provisions that guarantee to citizens the right to make contracts for the disposal of their property, and prevent legislative bodies from enacting laws that destroy such freedom of contract. Our courts, moreover, generally insist that these constitutional guarantees shall be rigidly observed; and they often set aside, as unconstitutional, laws that undertake to prevent certain contracts from being made between employers and employees.

Labor a commodity.

§ 201. But while labor must be regarded as a commodity, the value of which will be governed by conditions of supply and demand, it differs from other commodities in certain important respects. Indeed, it is to the peculiarities of this commodity that we must attribute the chief responsibility for the existence of such a thing as a labor problem.

Labor a peculiar commodity.

In the first place, the laborer and his commodity are inseparable, and do not part company when an employment contract is made. "It matters nothing to the seller of bricks whether they are to be used in building a palace or a sewer; but it matters a great deal to the seller of labor, who undertakes to perform a task of given difficulty, whether or not the place in which it is to be done is a wholesome and a pleasant one, and whether or not his associates will be such as he cares to have." From the very nature of the case the person who sells labor is vitally interested in the conditions of employment; while, on the other hand, the buyer has to exercise some control over the seller. The employer usually determines the place of work, and sometimes even the residence of the laborer; he has more or less control over the associates of a workman; and upon him depend many things that affect vitally the welfare of the employee, such as the hours of work, sanitary conditions, and safety of life or limb. Under such circumstances there is far more opportunity for ill will and serious friction between the parties to an exchange than there can be in contracts for the sale of other commodities.

The laborer and his commodity are inseparable.

In the next place, labor is more like a perishable than a durable commodity, since there is often a certain element of compulsion in its sale. The hired laborer commonly has little or nothing upon which he can fall back for support, so that he must dispose of his commodity at once for whatever price can be obtained; whereas "the seller of other goods, by the very fact that he has them to sell, has some capital upon which he can live while he is trying to make a satisfactory

Compulsion to sell labor.

contract." Moreover, poverty and ignorance may prevent a man from offering his labor in the most favorable market, and compel him to sell it in one that is already glutted. When such conditions are taken into the account, it is obvious that the person who offers labor in exchange for daily wages is not infrequently in a less favorable position than the seller of other commodities.

A third peculiarity is connected with the one first mentioned: the supply of labor changes very slowly, and only through changes in the number of laborers. The supply of other commodities can be decreased by stopping production; but it is far less easy to decrease the number of laborers when falling prices lead to a partial suspension of productive industry and throw many men out of employment. When a decreased demand for labor causes low wages and lack of employment, large numbers of unemployed laborers press into the market and bid for work. Thus a decreased demand may bring an increased supply of labor into the market. On the other hand, when demand begins to increase after a period of hard times and low wages, a "reserve army" of unemployed laborers, "which the poor-houses at the expense of the whole population had supported . . . as long as dullness in the business continued," presses into the labor market and increases the supply.

The supply of labor changes in a peculiar manner.

§ 202. When due importance is assigned to the peculiarities which this commodity presents, it is clear that there must often be less actual freedom in a contract for the sale of labor than in that for the sale of most other things. Legally the laborer may do as he pleases; but as a matter of fact, he often has

Summary.

no alternative and must accept any terms that are offered. When a woman, a child, or one of a struggling crowd of men at a factory gate, stands before the employer who represents a capital of a million dollars, there is little real equality in the terms upon which bargaining proceeds; and, for this reason, efforts have been made to improve the conditions of employment by legislation and the formation of labor organizations.

II. Labor Legislation

§ 203. The growth of the factory system in England, as the result of the Industrial Revolution, partly produced and partly brought to light a multitude of evils that called for some effectual remedy. Early in the nineteenth century women and children were employed in factories and mines under conditions that were destructive of body and soul; for all operatives the hours of labor were prolonged beyond human endurance, and little or no care was taken to protect workmen from the most dangerous accidents. In 1802 Parliament passed the first of a series of factory acts, which, while nominally restricting the laborer's freedom of contract, have gradually effected a material improvement in his condition. As systematized and extended since 1878, these laws now prohibit the employment of children under a certain age, and limit the hours that women and children can be employed in various industries; moreover, they enforce suitable ventilation and the proper sanitation of factories, and require that safety appliances shall be used whenever dangerous machinery is employed. The factory acts applied at first

English factory legislation.

only to women and children, and at present interfere less with labor contracts made by adult males than with those of other classes of laborers; yet in a number of instances restrictions have been imposed upon callings that are followed chiefly or exclusively by men.

§ 204. Like the English factory acts, American legislation applies chiefly to women and children, although men engaged in the same industries are affected indirectly by the statutes. Our laws prohibit the employment of children under certain ages, and limit the number of hours that women and children can labor in factories and workshops. They frequently require the proper ventilation and sanitation of factories, and the fencing of dangerous machinery. In some cases statutes call for weekly payments, prohibit company stores or truck payments, and even regulate the employment of adult males in certain industries that are considered especially dangerous to the health of the operatives. In many cases the letter of the law is far stricter than its enforcement, and sometimes factory acts are partly inoperative on account of the absence of a competent body of state inspectors. The least has been accomplished in the South, where the recent growth of factory industries has produced certain conditions that call loudly for effective regulation.

Details of American legislation.

§ 205. Not infrequently the courts have declared certain kinds of labor laws to be unconstitutional upon the ground that they have invaded the citizen's freedom of contract. The decisions of the courts of one state sometimes conflict with those of others, and some of the problems involved seem

Constitutionality of labor legislation.

to depend largely upon latitude or longitude; so that it is not easy to say just how far an American legislature can lawfully proceed with labor legislation. Laws regulating the labor of minors are generally upheld, because such persons are not yet in a position to make independent contracts, and, in a sense, are wards of the state. In some states laws regulating the employment of women have been held to be unconstitutional; and, in nearly all cases, restrictions upon the hours that adult males shall work have been set aside by the courts. Yet a few years ago the Supreme Court of the United States upheld a statute of Utah by which the employment of men in mines and smelters was limited to eight hours per day. So far as any clear principle can be distinguished in the tangle of conflicting opinions, it appears to be held that an act that has the effect of interfering with contracts made by adult males or females is constitutional only when it can be deemed a valid exercise of the police power of the state, this power being that of making such wholesome ordinances as are needed for the health, safety, or morals of its citizens. Laws requiring the proper ventilation and sanitation of factories would seem, upon their very face, within the scope of the police power; but acts limiting the hours that women shall work are not so clearly included, though it is probable that most courts will uphold them. With the contracts made by adult males, legislative interference is hardest to justify. In a mine or a smelter the propriety of state regulation is, obviously, less doubtful than in such an industry as agriculture; while in the case of a railway, the safety of travelers is involved, and the enforcement of reasonable hours would seem to be

clearly admissible. The final outcome will probably be that the courts will find ways by which they can uphold the constitutionality of such legislation as experience shows to be necessary for the public welfare.

§ 206. Laws that enforce proper ventilation and sanitation of factories, or require adequate provision for the safety of laborers, need at this date no justification. Few disinterested persons will question the propriety of such regulation of the conditions of employment. The restriction of child labor also requires no defense, even though many of our states now fall far short of performing their duty to the little victims of employers' greed or parental neglect. With the hours that adults shall work, the propriety of governmental interference is not so generally conceded. Undoubtedly there is a reasonable limit for the working day; but this differs from industry to industry, according to the healthfulness of the work or the intensity of exertion that is required. For this reason it is difficult to establish a general rule. The twelve or fourteen hour day of a former generation is, beyond question, too long for the welfare of the worker; but it is not clear that nine or ten hours is an excessive number to require in the average occupation, although there are some industries where eight hours, or even less, are all that should be demanded. In the past, reductions in the hours of labor from fourteen to twelve and from twelve to ten have probably increased the efficiency of the workman enough to offset the loss of working time. A further reduction to nine hours, or even to eight, may have a similar effect in some cases; but in others it probably decreases the product,

Economic aspects of labor legislation.

and ultimately lowers the wages that can be paid. A uniform eight-hour day, which is often advocated, may yet be attainable; but it can come, if it is to be reached without reduction of wages, only by repeated experiments in one industry after another, and upon condition that the efficiency of the laborer increases *pari passu* with the decrease of time that he works. To introduce it by legislation would be unwise, even if it were constitutional.

III. Labor Organizations

§ 207. Although combinations of craftsmen existed in some English towns during the eighteenth century, the modern labor organization did not make its appearance until the Industrial Revolution had prepared the conditions that were necessary for its growth. The aggregation of capital into large masses, one of the most striking results of the Revolution, tended to widen the distance between employer and employee, and to develop class feeling among the laborers. In the small workshops of former times, in which the employer worked with the aid of a few journeymen, constant personal intercourse existed; while since comparatively little capital was required to establish an independent enterprise, the average journeyman could look forward to the day when he should be master of his own establishment. But all this was changed by the growth of the factory system. With the hundreds or thousands of men in his vast establishment the employer could no longer have that intimate intercourse which had served so often to promote good will and to remove causes of discontent. And, at the same time, the enormous amount

Growth of labor organizations.

of capital needed for a modern factory made it impossible for the average laborer to expect to rise above his station and become an independent producer. Such conditions made it inevitable that, as the distance between employer and employee widened, laborers should resort to common action in order to protect and advance the interests of their class.

§ 208. Organization has usually been effected through combinations of workmen in the same craft or trade, and in this manner the trade union has been developed. It has proved difficult to unite men of different trades into a single association, since there is little community of feeling and may be considerable diversity of interest among them; while unskilled laborers are the hardest of all to organize, probably because they are usually of a lower order of intelligence and are united by fewer apparent ties of common interest. The result is that trade unions, even in seasons of greatest prosperity, have never represented more than a fraction of the whole body of laborers. At the present moment there may be 2,000,000 laborers in the various organizations that exist in the United States, but this number is not more than one fifteenth of the whole body of persons engaged in gainful employments, or more than one twelfth of the entire number of hired workers. But in various industries, usually those in which skilled labor is required, the proportion is far larger, and it sometimes exceeds one half of all the persons in the trade.

The trade union.

At various times efforts have been made to unite all classes of laborers, including unskilled workmen, in a single organization. In this country, the Knights of

Labor, organized upon this basis, secured a large membership between 1883 and 1887, increasing their numbers from about 52,000 in the former year to nearly 1,000,000 in the latter. But then a reckless policy with respect to strikes, conflicts with trade unions, and a disposition to enter politics brought about the overthrow of the association, which, in 1893, was supposed to have but 40,000 paying members. Its failure taught labor leaders the necessity of organizing along trade lines, and during the past decade the trade union has again to come to the front.

Knights of Labor.

The trade unions, however, have found it desirable to coöperate for certain purposes, and have established the American Federation of Labor, which, between 1897 and 1903, increased its membership from 265,600 to 1,605,500. The federal form of organization has permitted each trade to preserve its autonomy, and yet has made it possible to coöperate for certain ends. Besides aiding the eight-hour movement and advocating labor legislation, the Federation now keeps a considerable force of organizers in the field, and has had, in recent years, some success in forming unions of unskilled laborers. Aiding rather than attempting to rival the organizations existing in separate trades, the Federation has now gained the leadership of the American labor movement.

American Federation of Labor.

§ 209. The objects of labor organizations are various, but their chief purpose is to better the economic condition of the workmen. While many of them endeavor to improve the education and the morals of their members, or to promote social

Objects of labor organizations.

intercourse, and while valuable results are sometimes accomplished in these directions, the labor unions are interested chiefly in bettering the conditions of employment, advocating favorable legislation, and providing insurance against accident, sickness, or death.

Both in the United States and in England, the trade unions have exerted some influence upon legislation, but this feature of their work can be given no further attention here. Their insurance schemes are often useful to the organizations themselves in attracting new members and providing a method of disciplining the disobedient or unruly, who, through expulsion, lose their interest in any funds that have been accumulated. But considered purely from the standpoint of the security which they afford, the arrangements of the unions are not so advantageous for the insured. Usually insurance funds are not separated from the other resources of the unions, and may be expended in aid of strikes, so that those who pay money for one purpose may see it disbursed for another. Then, too, the rate of assessment has not always been high enough to place the schemes upon a sound financial basis. In these respects there is much room for improvement, and it is to be hoped that more of the unions will follow the example of the Locomotive Engineers in effecting an absolute separation of strike and insurance funds.

Insurance schemes.

With respect to the conditions of employment, the unions endeavor to secure shorter hours of work, better wages, and, sometimes, the exclusion of workmen that refuse to join their organizations. In these matters it is possible for a combination to secure

Conditions of employment.

better terms than individual workmen would often obtain, on account of the unequal intelligence, resources, and tactical advantages of the large employer and the single laborer. It is not correct to say, as is sometimes done, that workmen unorganized would be absolutely helpless in the hands of their employers, since in times of expanding trade the demand for labor is so great that the advantage is not wholly with the capitalist. It is also true that, when business becomes less brisk and the demand for labor declines, the strongest unions cannot avert the inevitable consequences of such a condition of the labor market. But when all this is conceded, it remains true that a well-organized union can make wages rise more promptly as the prices of commodities advance, and minimize the loss that laborers suffer when the market begins to fall. Moreover, in what may be called "sweated trades," where ignorance, poverty, and an excessive supply of labor have reduced wages below the level required for a decent subsistence, it is possible for a union to infuse hope and courage into the workers, and enable them to better their condition very materially.

Possible advantages of labor organizations.

§ 210. When wisely conducted, a union may be a highly desirable means of securing the healthy operation of competition in the market for labor. By making the strength of the parties to the contract substantially equal, it can oblige employers to pay all that the market will enable them to give; while, by assisting its members to migrate to places where the demand is active, it can distribute the supply of labor in the manner that is most advantageous to the community. By accumulating a reserve fund upon which its members

can subsist while temporarily out of employment, it enables the workman to reserve his commodity until he finds such conditions as he deems advantageous to himself. The satisfactory working of the laws of supply and demand requires that laborers, as well as employers, shall be intelligent, alert, and able to seek their own advantage — a condition which the union endeavors to maintain.

§ 211. A few words should be said concerning two things which are now cardinal points of trade-union policy, —the standard wage and the union, or closed-shop. In adjusting wages the unions usually demand a standard rate for all their members, except perhaps a few older or less competent workmen who may be permitted to accept less. Theoretically this is a minimum wage, and there is nothing to prevent an employer from paying more; but in practice it is often a maximum rate beyond which superior workmen do not advance. This is due sometimes to the fact that the minimum is placed so high that many employees do not earn all they receive, so that it is impossible to pay more to the better workmen, who must carry the poorer upon their backs. Or, in other cases, it arises from a disinclination upon the part of unionists to allow any of their members to do more than a certain amount of work, — a matter to which we shall return in a later paragraph.

The standard wage.

It is even urged that the standard rate should be maintained at all times, no matter what the condition of the labor market may be, and that when the demand for products declines and prices fall, an employer should be obliged to go out of business rather than be allowed to cut wages. This method disposes of

Criticism.

the employer, but it does not provide for the payment of the standard wages after he goes out of business; in fact it would merely increase, in times of depression, the army of the unemployed by whose competition ultimately the standard rate would be broken down even in those establishments that might maintain their solvency. With the progress of industry it is possible and desirable that the rate of wages should steadily advance, but its upward movement cannot be continuous, irrespective of the conditions of the market. So long as conditions of business fluctuate, the rate of wages cannot be unaffected by this fact. Unions can demand a higher rate in every period of rising prices, but with a falling market it is idle for them to refuse to make concessions.

§ 212. As labor organizations increase in strength and numbers, they often demand that shops or factories shall be closed to all workmen who cannot produce a union card. When this is done in order to combat the efforts of employers to break up the unions by constantly displacing their members in order to make room for outsiders, it would seem to be a justifiable weapon of defense. But in cases where no discrimination is practiced against unionists, the demand for a closed shop cannot be justified. It means nothing more or less than that a private association attempts to deny the right to work to all who will not join its ranks, and it can be enforced only by arousing the worst passions of human nature against the man who refuses to join a union.

The closed shop:

In defense of the closed shop it is argued that a union secures better conditions in its trade, by which all laborers

are benefited, and that these advantages should not be enjoyed by persons who have not contributed to obtain them. But, if this is true, it does not follow that the union should oblige outsiders to contribute; as well might a church, upon the plea that its good offices benefit the entire community, attempt to tax every one for its support. If it is necessary to force contributions to unions or to churches, the authority of the government must be invoked, because private organizations cannot be allowed to undertake the one thing or the other. At present the theory upon which we proceed is that both churches and labor unions are best conducted when they appeal to the reason or the interests of their supporters; and if compulsion is to be employed in either case, this should proceed from the government and not from a private organization.

(*a*) **Involves compulsion.**

While monopoly might not result from the establishment of the closed shop, provided that a union opened its doors to all competent persons who would enter the trade, there would be great danger of a different outcome. By imposing high initiation fees, requiring long apprenticeships, and giving unfair advantages to the children of its members, a union could easily become the master of the situation, and abuse its powers for selfish ends. Labor organizations are subject to all the infirmities that combinations of capitalists display, and there is no reason for thinking that a monopoly of labor is at all preferable to a monopoly of capital. Capitalist and laborer alike need to be kept upon their good behavior by the pressure of competition, and the public must suffer when either of them acquires a monopoly.

(*b*) **Monopolistic in its tendencies.**

§ 213. It is often charged that trade unions restrict the amount of work which their members do. They are also believed to exercise an unfavorable influence upon industrial efficiency. In considering the matter it should be remembered that there are certain reasonable limits to the amount of labor that any one should perform. In a trade that demands severe physical exertion or exposure to more or less unhealthful conditions of employment, there is a pace that makes a workman old at forty, and one that will enable him to do a man's work still at the age of sixty. If a union does no more than oppose over-driving and endeavors to insure to its members forty instead of twenty years of efficiency, its course is morally and economically justifiable. But, unfortunately, this is not always the whole of the story. In a few cases the regulations of unions have forced an unreasonable restriction of the output; and, in a somewhat larger number, a tacit agreement among the members has had the same result. The precise extent of this evil is hard to determine, and sweeping statements should be avoided. Here and there in the building trades, dawdling has sometimes been reduced to a fine art, and one can occasionally observe elsewhere that union workmen are acquiring the most leisurely habits of work. It should be remembered, however, that laziness is older than trade unionism, and that the unions can be held accountable only for cases in which their influence has tended to increase this evil. Such instances undoubtedly exist, but more evidence than has so far been adduced would be needed to justify any more positive statement than we have made.

Restriction of output.

§ 214. The growth of labor organizations has led to much friction between employers and employed, the two parties resorting to such weapons as the lock-out and the strike, the blacklist and the boycott. In the United States no less than 22,793 strikes occurred between 1881 and 1900, involving 117,509 establishments and 6,105,694 employees, while during the same period employers in 9933 establishments locked out 504,307 men. In these contests the laborers sacrificed $306,682,000 in wages, and the employers are supposed to have lost $142,658,000, while the inconvenience occasioned to the public defies all computation. Fifty per cent of the strikes and a similar proportion of the lockouts are reported to have been successful, while thirty-six per cent of the former and nearly forty-three per cent of the latter failed completely. In the remaining cases compromises of one sort or another were finally effected. **Strikes and lockouts.**

In the industrial warfare represented by these statistics the laborers often endeavored to enforce their demands by the boycott, which is an organized effort to persuade or intimidate other persons from having dealings with their employers; and the employers made more or less use of the blacklist, by which they attempted to boycott obnoxious members of the unions. Both of these weapons are illegal, and deserve the severest condemnation, since they constitute a direct interference with the rights of others. The mere strike, however, and the lockout are in themselves perfectly lawful acts, although they may be accompanied by objectionable features. They have often led to violence and the loss of life and property, and recently, in the state of Colorado, **Industrial warfare.**

they have produced a condition that can be described only as civil war. In most cases the interests of the public, the third party to the transaction, have been ignored by both contestants, as was made manifest in the great coal strike of 1902.

Responsibility divided.

The responsibility for such conditions is sometimes laid at the door of labor organizations, but not more than half of it belongs there. The workmen have often made unreasonable demands; they have been arrogant and selfish in too many cases, and have sometimes suffered from outbreaks of homicidal mania. But, on the other hand, the reasonable demands of labor have often been met with insolent refusals to treat with the representatives of any organization; the unlawful boycott has been met with the equally unlawful blacklist; and violence to non-unionists has been met, as in Colorado, by intimidation of the members of the unions. In 1904 the labor organizations of the country were fighting against inevitable reductions of wages in the face of a falling market, while employers were forming associations for the purpose of exterminating unionism, root and branch. Neither attempt could succeed, and the net result was loss to both sides and great inconvenience to non-combatants.

Conciliation, shop councils, joint agreements.

§ 215. The losses and disturbances occasioned by labor controversies have called forth various plans for remedying such difficulties. One expedient has been the establishment of joint boards of conciliation in various trades. In these schemes employers and laborers in individual establishments have appointed shop committees before which

complaints can be brought for calm and fair consideration before they lead to serious disputes; or employers' associations and labor organizations covering entire trades have arranged prices and conditions of employment for definite periods of time, and have agreed to submit to boards of arbitration all disputes that may arise concerning the interpretation of the contracts. When such methods have been tried in good faith, it has been found that many causes for disputes can be removed by a friendly conference; both employers and laborers have taken care to avoid mistakes, and have sometimes shown increased respect and consideration for one another. In some cases strikes and lockouts have been avoided for considerable periods of time; and it has been demonstrated that the conflicting claims of labor and capital can be adjusted upon a basis of reason and justice without appeals to the wager of battle, and, withal, in a spirit of mutual good will.

When disagreements between employers and laborers have led to an open rupture, both parties have sometimes consented to submit their cases to arbitration by some fairly constituted tribunal. A few of our states have established boards of conciliation and arbitration, the services of which are placed at the disposal of laborers and capitalists. In Massachusetts something has been accomplished in this manner, especially in the settlement of controversies that have not yet led to an open rupture. Even here, however, the plan has not prevented the occurrence of serious strikes; while in other states, the public boards of arbitration have often fallen into the hands of politicians for whom neither laborers

Voluntary arbitration.

nor capitalists have entertained much respect. During the past decade the prestige of state boards of arbitration has declined; and the shop council and the trade agreement now seem to be the favorite expedients for obtaining industrial peace.

Compulsory arbitration.

In view of the facts that no other method has been entirely successful in preventing strikes, and that, in many cases, one side or the other seems reluctant to adopt any measure of relief, it has been proposed to compel laborers and capitalists to settle their disputes in courts of law. New Zealand, in fact, established a system of compulsory arbitration in 1894, and her experiment is now being watched with considerable interest. But compulsory arbitration, except, perhaps, in a few industries that have a public character, would undoubtedly be unconstitutional in the United States; and it is not at present favored by either laborers or capitalists. At best it presents very serious difficulties, the first of which is to devise practicable methods of enforcing decisions that are unfavorable to laborers.[1] In New Zealand the workmen are obliged to organize unions before they can appeal to the arbitration courts; but unless the union possesses a large amount of property, the members can drop out rather than work under conditions that they do not wish to accept. So far the New Zealand act has occasioned little difficulty because it has been operating in good times; but the real test of its efficiency will not come until the courts, in a period of depression,

[1] The employer, of course, gives hostages when he establishes his enterprise, since he places himself in a position that makes it easy to enforce an award unfavorable to him.

have to enforce a series of awards unfavorable to the workmen. In the United States, at least, the difficulties at this point would be very great.

The other serious difficulty in compulsory arbitration arises from the fact that it is a very delicate matter for an outsider to determine what rates of wages employers must pay and employees accept. The only motive for offering wages is the desire to make a profit, and if the prospect of obtaining this is destroyed by decree of a court, the natural result would be to decrease the demand for labor and the wages that can be paid the workmen. On the other hand, the employee, although he can be compelled to submit to conditions that he finds distasteful, cannot be obliged to render willing and effective service, even though he is forced to perform a certain amount of labor. It is conceivable that experiments may show that compulsory arbitration can be administered in a manner satisfactory to all concerned; but for the present it must be considered a dangerous and undesirable remedy, worse, indeed, than the evils it is designed to cure.

Criticism.

§ 216. Disputes between labor and capital will continue so long as industry is organized on its present basis; and the only thing that can be expected is that needless controversy will be avoided, and that each contestant will respect the rights of the other and those of the public. Through shop councils and joint agreements much can be accomplished, and relentless punishment of unlawful tactics will remove a great part of the inconvenience which non-combatants now suffer. As labor organizations grow older and acquire property, they become more conservative; and employers are slowly

Summary.

learning that the trade union has come to stay, and that laborers are entitled to have a voice in determining the conditions under which they work. It is useless to hope for an industrial millennium; but occasions for controversy will be removed in proportion as labor and capital acquire respect for each other's strength, and each considers fairly the just claims of the other.

IV. The Relation of Laborers to the Product of their Labor

§ 217. Irrespective of any influence that trade unions exert, experience shows that laborers receiving time wages are likely to have less incentive than they need to turn out a large product. Piece wages, therefore, have been introduced in many industries, in order to give the workman a greater stimulus to diligent effort. Not infrequently employers have introduced piece wages and secured a larger product from each laborer, and then have reduced the rate paid per piece, so that an employee must work much harder than before in order to make as much as his former time wages. Naturally enough, such experiences have led many laborers to look with suspicion upon proposals to adopt piece wages, and to refrain from increasing their output even when the system has been introduced. Yet in many industries payment by the piece prevails, and by fair treatment the opposition of the wage earners has been overcome.

Time and piece wages.

§ 218. Another method of adjusting the remuneration of the laborer is what is known as a progressive wage. Employees have been guaranteed a minimum time wage, and then offered a premium for attaining a certain degree of efficiency; or piece rates

Progressive wages.

have been adjusted upon a progressive scale, the rate per piece rising slightly as the output increases. In some cases progressive wages have increased the product by as much as fifty, eighty, or even one hundred per cent. They may be a desirable method of remuneration in some occupations; but, when they combine a minimum time wage with a premium for efficiency, they are less advantageous for the laborer than a simple piece wage.[1]

§ 219. Profit sharing is a plan which is designed to give the laborer an inducement to work more efficiently, and to secure greater harmony of interest between employer and employee. It offers the laborers, beside their usual wages, a share in any profits realized from the business over and above a certain minimum amount considered to be the necessary remuneration of the proprietor, the portion of each employee being determined upon some equitable basis. In some cases this arrangement has given laborers an inducement to increase the product, improve its quality, or economize in the use of materials, so that by the efforts of the participants themselves profits have been increased and the remuneration of the workers enlarged. But much more often it has turned out that the profits exceed but little, if at all, the minimum sum reserved for the proprietor; and, therefore, the laborers have had only the slightest interest in the working of the schemes, not hesitating to strike if there was any prospect of immediate advantage from such a source.

Profit sharing.

[1] The premium paid for exceeding a certain product is usually less than a proportionate addition to the time wage.

As a scheme of distribution, profit sharing is open to serious objections. The profits of a business can be increased by greater diligence on the part of laborers, but they depend so largely upon the skill exercised in buying materials, organizing production, and disposing of the product, that their amount does not and cannot vary proportionately to the increased zeal and efficiency of the employees. Laborers may increase the product ten per cent, or reduce its cost in corresponding proportion, but bad business management may result in an actual loss upon the year's transactions. In this case the extra exertion of the employees would reduce the extent of the losses, but would bring no extra remuneration. On the other hand, if the profits distributed are not created by extra exertion upon the part of the workmen, but arise from greater skill in the management of the business, they become a mere gratuity; and the whole scheme works unfairly to the employer.

Criticism.

Too often profit-sharing arrangements are so contrived that they have the evident purpose of detaching laborers from the trade unions, and of hampering their freedom of action. When participation in profits is deferred for a period of years, or confined to operatives who have been in the employ of the firm for a considerable length of time, the effect of the plan is too obvious to need discussion. Moreover, if the prospect of sharing in profits is held forth, laborers are less likely to demand higher wages at times when workmen in other establishments are securing advances; and it has often turned out, when profit sharing has lasted for a number of years, that the stipulated wage paid each employee

Further considerations.

plus his share in the profits was no more than the market rate of wages. In some instances profit sharing has increased the remuneration of laborers and promoted a better understanding between employers and employees, but it has more often disappointed the hopes of its advocates. As a permanent solution of the labor problem, it is hardly entitled to serious consideration.

§ 220. Coöperation (§ 34) proposes to remove friction between employer and employee by eliminating the employer. It is usually said to have two forms, distributive and productive. The former, however, is nothing more than the coöperation of consumers in order to get rid of the so-called middleman, and affects in no appreciable way the labor problem. In England it has resulted in the growth of a considerable number of successful stores, and in the United States has had somewhat less success. Productive coöperation, on the other hand, is a serious attempt to grapple with the problems of labor. Societies of workingmen contributing some capital, and often borrowing a part, have developed in England a number of prosperous enterprises, and have sometimes succeeded in the United States. In France, Belgium, and a few other countries experiments with coöperative production are now being tried on a considerable scale.

Coöperation.

Whenever coöperative enterprise is practicable, it possesses very obvious advantages over the wage system. Self-employed workers have shown activity and zeal that hired laborers seldom exhibit, frugality and saving have been encouraged by the strongest possible inducements, while the responsibility of pro-

Its advantages.

prietorship and the experience in business management have had an excellent moral and intellectual influence upon the coöperators. The system, of course, eliminates strife between the employing and laboring classes.

Its difficulties.

But many difficulties beset the path of coöperators. The success of any enterprise depends inevitably upon the ability with which it is managed, and coöperators must contrive somehow to secure the most efficient leadership if they hope for success. They may appoint a shop committee to direct their affairs, or secure, from their own ranks or elsewhere, a superintendent or manager. With the committee system responsibility and power are divided; and with both systems the management may be hampered by differences of opinion among the rank and file of the association. Then, too, when able managers are found, coöperators are not always willing or able to pay enough to retain the services of such men. In many cases, also, it has been hard for managers who owe their positions to the good will of the men under their direction to enforce the best of discipline. In general, coöperation has succeeded best in industries of a less complex character, where skillful management counts for less and efficient workmanship is of more avail. Finally, it is difficult for laborers to secure, especially at critical times, the capital needed to establish and develop their enterprises. Not infrequently when conspicuous success has been attained, the very need of additional capital to extend the undertaking has resulted in the control of the establishment passing to outside capitalists, and true coöperation has thus come to an end. Up to the present time the various difficulties here enumerated

have usually circumscribed narrowly the field within which coöperative production can succeed. The system is, undoubtedly, an ideal one whenever practicable; but for a long time to come the large majority of business undertakings will be managed by the *entrepreneur*, who seems best able to insure to society efficient direction of its productive forces.

FOR SUPPLEMENTARY STUDY

General: HADLEY, Economics, 336–369, 404–421; SEAGER, Introduction to Economics, 385–433.

Special: ADAMS, Labor Problems; GILMAN, Methods of Industrial Peace; RAE, Eight Hours for Work; Report of the Industrial Commission, XIX, 723–956; SCHLOSS, Methods of Industrial Remuneration; WEBB, Industrial Democracy.

CHAPTER XIV

PROJECTS FOR ECONOMIC REFORM

I. The Single Tax

§ 221. At various times it has been proposed to alter radically the present distribution of wealth, and at present two projects enlist more or less public interest, the single tax and socialism. About 1870 a movement was started in England in favor of land nationalization. An organization known as the Land Tenure Reform Association, of which John Stuart Mill became the president, proposed that the state should take, by taxation, the future increase of land rentals, and that present owners should be given the option of "relinquishing their property to the state, at the market value which it might have acquired at the time when the project should be adopted by Parliament." The Association claimed that its plan was both just and desirable because the growth of ground rent (economic rent in the strict sense) is due to the progress of society in population and wealth, and not to "any effort or outlay by the proprietors."

Land nationalization.

§ 222. Some years later Mr. Henry George, in a work which gained a large number of readers, urged that the state should not only take by taxation the future increase of land rent, but should seize gradually the present economic rent of land, or at least

The single tax.

so much of it as should be needed to defray all public expenditures conceived upon a somewhat elaborate scale. His purpose would be accomplished by abolishing all other taxes, and imposing on land a single tax equal substantially to its economic rent, or such a proportion of it as might be required. He denied, moreover, the justice or necessity of compensating landowners for the losses occasioned in the execution of the plan, so that in scope and in method of operation his proposals were far more radical than those of the Land Tenure Reform Association, which had commanded the support of such an eminent economist as Mill.

Mr. George's arguments.

Mr. George, in expounding this scheme, argued vigorously that all men should have absolute rights of possession over the products of their labor and capital, even denying the justice of a tax that falls upon anything that a person has produced. He urged, however, that rent is not the product of any man's labor, but the result of social growth and activity by which the demands upon land are increased and its value enhanced. Since the community, in this view, creates rents, it should reserve them for public uses, and not allow them to be diverted into the pockets of private individuals. Mr. George attributed poverty and other social ills to the fact that landowners, contributing nothing to the product of industry, are allowed to claim, as society advances, an increased share of the proceeds.[1] He looked upon

[1] Mr. George's statement of the case was as follows: "The reason why, in spite of the increase of productive power, wages constantly tend to a minimum which will give but a bare living, is that, with increase in productive power, rent tends to even greater increase, thus producing a con-

the single tax as the panacea for all evils that can in any way be removed by social action, and denounced private ownership of land as robbery. Written with great power and even eloquence, his writings have gained for him a considerable number of disciples.

§ 223. Passing over the metaphysics of the question, it is tolerably evident, first of all, that there is a hiatus between the proposition that rent is an unearned income,[1] and the proposal to confiscate existing rents. Rent is not the only unearned income; inheritances, gifts, and some speculative gains are obtained without exertion on the part of the recipient. The right of private property, therefore, does not depend for its justification merely upon the fact that the objects owned are the products of the owner's labor; it depends at all times upon considerations of social expediency, and upon such grounds private ownership of land has been considered by most people to be justifiable. If the belief in the good effects of private ownership is a mistake, it would follow that society would do well to correct the error; but it would not follow that the whole burden of the change should be thrown upon those persons who, in entire good faith and in accordance with the will of the community as expressed in law, had invested their fortunes in land. Appropriating existing land values

Criticism.

stant tendency to the forcing down of wages." — Progress and Poverty, Bk. V, Chap. 2. By the "forcing down of wages," Mr. George means either an actual decrease, or a failure of wages to increase as rent increases, *i.e.*, a relative decrease.

[1] It is not true in all senses of the term that rents are invariably unearned incomes, as we have seen (§ 196). That there is a very large unearned increment, however, especially in cities, is conceded to Mr. George.

without compensation is not to be thought of, even though the rest of Mr. George's arguments commanded our assent.

But it is clear that Mr. George exaggerated the evils that follow private ownership of land, and overlooked entirely the benefits which have resulted from it. If we concede, as we must, that the usual effect of progress is to increase the value of the land, it does not follow necessarily that the proportionate share of the landlord in the product of industry increases. The landlord receives a higher rent for his land, but the product obtained from it may have increased in equal, or even greater, proportion, so that the share of the total product received by the landlord may be no larger than before. Until it can be shown that rent not only increases, but increases more rapidly than the product of industry, it cannot be demonstrated that the growth of the landowner's income is the cause of poverty. As a matter of fact, for a generation or more, wages have been steadily advancing in the United States and other progressive countries at the same time that rents have increased.

Further criticism.

Then, too, it should never be overlooked that, whatever evils may have resulted from it, private property in land has furnished the great stimulus for the development of the natural resources of the United States. The rise in land values following the establishment of each new settlement has lured hosts of people into the wilderness, and has been a not inappropriate reward for the hardships of pioneer days. In addition to this fact, when land ownership is widely distributed, as in this country, the increment of value

Advantages of private land ownership.

that results from social progress is sure to be widely distributed. Moreover, the desire to secure a small farm or a site for a house has been the principal incentive to industry and thrift for millions of people; and the acquisition of a little land has not only started many families on the road to a competency, but also created a vast body of prosperous, conservative, and law-abiding citizens.

§ 224. From a practical point of view, great difficulties would be encountered in the effort to apply the single tax to agricultural land. After a farm has been under cultivation for many years, it is extremely difficult to determine what part of the so-called rent which it yields is the mere value of the site, and what represents the interest on capital expended in improvements. Barns and fences can without difficulty be valued separately; but labor sunk in clearing, ditching, removing stones, and fertilizing defies accurate computation. The best that could be done would be to apply some sort of rough estimate which would, in numberless cases, do great injustice to landowners or impair seriously the revenue received by the government. In cities, of course, this difficulty would not arise, since it is possible to place separate valuations upon building lots and improvements, as is done to-day by the assessors in Boston and New York.

Agricultural and urban land.

§ 225. If the proposal to confiscate existing rents must be rejected as unjust, the same criticism cannot be directed at projects for gradually appropriating to public purposes the future increment of land values. The only question involved here is the desirability and practicability of such a change in

The future increment of land values.

the policy of the government. The practical difficulties in the way of separate valuation of land and improvements are, for the present at least, a decisive objection to the application of the scheme to agricultural holdings. With urban land this difficulty disappears; while here the amount of the future increment, and consequently the importance of the proposal, are decidedly greater. To buy out present owners, at such values as municipalities are obliged to pay for land taken for city purposes, would involve communities with a stationary or slowly increasing population in a hazardous speculation, even though a city that was growing with great rapidity might safely undertake such a venture. But to adjust municipal taxation in such a manner as to intercept a considerable part[1] of the future unearned increment from land would be a safe and probably a desirable policy. This would place a part of the increasing burden of city taxation upon an object that derives its value from municipal growth, and not from individual effort; it would do no injustice to present owners; and would make it possible in growing communities to reduce the pressure of taxes upon business enterprises. It would, moreover, be in line with some of the existing tendencies in municipal finance.

§ 226. In passing judgment upon Mr. George's pro-

[1] The whole of the future increase of rentals could not be taken without injustice to present proprietors. The purchase price paid for land in a progressive city is somewhat greater than its capitalized present rental value, since the purchaser can and must pay more in view of the prospective increase of the rent. Some part of the future increase, therefore, is reflected in present capital values, and should be left to the present owners.

posals, we have been unable to accept the dark picture which he has drawn of the results of private property in land, and we are obliged, under any circumstances, to reject the idea of taking existing land values without compensation. It does appear, however, that both Mr. George and the English Land Tenure Reform Association have pointed to a highly eligible object for special taxation. When it is conceded that the past increment of land values is beyond the reach of any just exercise of the taxing power, the question remains: What policy should be pursued with reference to the future increase of ground rent? So far as urban lands are concerned, there can be little doubt that it is the part of wisdom for municipalities to seize upon a source of revenue that is brought into existence by urban growth and to a large extent maintained by constant public expenditure.

Conclusion.

II. Socialism

§ 227. More radical than the single taxer in his criticism of the existing distribution of wealth, the socialist holds that interest and profit, as well as rent, are unearned incomes unjustly extorted from the persons whose labor creates all the wealth that is brought into existence. Socialism, therefore, contemplates such a reorganization of economic society as shall bring all the instruments of production, capital as well as land, under collective ownership; replace private enterprise by public management of all important industries; effect a just distribution of the social income; and permit private ownership of the consumer's goods dealt out

Socialism defined.

to each worker. Its elements may be briefly stated as common ownership of land and productive capital; public organization and management of at least all staple industries; the distribution of wealth by public authority, in accordance with some principle regarded as just; and private property in the incomes allotted to individuals.

§ 228. Socialism is not a new but a very old theory which has appeared and reappeared in one form or another ever since the time of Plato. It has usually attracted most interest at times when a sharp separation of rich and poor has brought to general attention the unequal distribution of wealth and the problem of poverty; although ideals of social or political equality, such as appealed to so many persons in the eighteenth century, have been another source of socialistic theories. Plato's "Republic," for instance, with its proposals for the extremest subordination of individual life to the control of the state, has for its background a bitter and prolonged contest between rich and poor which had long been waged in Athens and other Greek cities. Again, in the sixteenth and seventeenth centuries, the social distress occasioned by widespread economic and political changes evoked such works as Sir Thomas More's "Utopia" and Campanella's "City of the Sun"; and in the eighteenth, the misery that existed in France made that country a fruitful field for socialistic speculations. Finally, in the nineteenth century, the increased importance of capital and the sharper separation of the employing and the laboring classes have prepared the ground, already sown with democratic political ideals, for the growth of modern socialism.

Its history.

§ 229. Socialism of the present day is a contemplated scheme of industrial organization based upon an analysis of the workings of modern industrial society. The central fact in the present industrial society is said to be capitalistic production, by which is meant production carried on with the aid of so much capital as has come into use since the Industrial Revolution. Capitalistic production, the socialist holds, has divided society into two classes, those who own land or capital and those who do not, the latter being dependent upon the former for an opportunity to employ their labor. Between capitalist and laborer, consequently, there has arisen a class struggle, in which the owner of capital exploits the labor of the hired workman to his own advantage; while the workman, oppressed with long hours of toil and low wages, endeavors vainly to improve his position so long as the existing system continues. The political and industrial history of the nineteenth century, it is alleged, is nothing but a record of the various phases which the warfare between the capitalists and the laborers has assumed; while the only clew to the development of the twentieth is to be gained from a study of the probable tendencies of this class conflict.

The basis of modern socialism.

The machinery by which the capitalist succeeds in exploiting the laborer is the wages system. Socialists hold that the entire product of industry is to be attributed to labor, and that capital is nothing but a certain amount of labor embodied in a tool or machine. But under the wages system the laborer does not receive all that he produces, because the employer manages to withhold a part as compensation for the use of his

Alleged exploitation of labor.

capital.[1] The result is that, whereas a laborer by working three or four hours could produce all the wages that he actually receives, the employer keeps him at work for nine or ten hours and appropriates, under the name of rent, interest, or profits, the surplus product of the additional time. Such a contract, though disadvantageous to the laborer, is forced upon him, the socialist declares, by his poverty and inability to hold out for better terms. If it ever happens that favorable circumstances enable a laborer to secure a wage that will somewhat more than cover the bare living expenses of himself and family, the growth of population speedily forces the rate down again to the minimum required for mere existence, so that in fact, by an iron law, the wages system dooms the laborer to an unsatisfactory and precarious position.

The only salvation for the laborer, according to the socialist, is to acquire political power and to take possession of the instruments of production by which he is now "enslaved." Through the establishment of what is called the coöperative commonwealth, the workers can secure access to land and capital without paying tribute to landlord or capitalists; and socialists are now addressing themselves actively to the work of stirring up class feeling among laborers and impressing upon them the necessity for independent political action. In Germany, where the movement has made the most progress, no less than 3,000,000 votes were cast at the election of 1903 for socialist members of the Reichstag; while in Belgium,

The remedy proposed.

[1] That is, he withholds something in excess of what is needed to replace the labor expended in producing the capital consumed in production. To the mere replacement of capital he is, of course, entitled.

France, Italy, and the United States the adherents of socialist parties are now numbered by the hundreds of thousands.

§ 230. Present-day socialists, while proclaiming the necessity for independent political action by laborers, believe that their coöperative commonwealth must, in any event, be established ultimately by the mere operation of economic forces — the forces of capitalism itself. The advantages of large-scale production are said to be aggregating capital in larger and larger masses, the big capitalist swallowing scores of his smaller competitors; until at last, through the formation of trusts, a development has begun which is to destroy competition in practically all parts of the field of industry. The result of the present tendency toward concentration is to be the ultimate control of all industry by a small body of capitalists, whose success will, on the one hand, prove the practicability of organizing business enterprises on a national scale, and, on the other, make the continuance of private ownership impossible. The trust, therefore, is welcomed as an important factor in bringing about the establishment of socialism, since it is believed to demonstrate the practicability of the scheme and to produce an amount of discontent that will finally lead to the nationalization of industry.

The alleged tendency toward socialism.

§ 231. Socialism is believed to be a desirable thing for the laboring classes since its object would be to give them the shares that now accrue to the owners of land and capital. But beyond this, it is alleged that the coöperative organization of industry would be advantageous because it would avoid the waste

Supposed advantages of socialism.

occasioned by competition. Production as now organized is criticised as planless, since producers often make mistakes or work at cross purposes; whereas a nationalized industry can be managed on comprehensive general plans, with a minimum of wasted effort. Needless expenses, it is said, are now incurred in advertising and in competing for business, all of which socialism would render unnecessary. Moreover, with land and capital in private ownership, a considerable number of persons are living upon fixed incomes and producing nothing, who would, under the new régime, be obliged to work or to starve. By avoiding waste, inaugurating comprehensive plans, and obliging every one to work, it is claimed that socialism would make the production of wealth so large that all workers would be assured incomes adequate for the satisfaction of every rational want, even with a far shorter working day than prevails at present. From the standpoint of production, therefore, as well as from that of distribution, socialism is regarded as the ideal method of economic organization.

Criticism of socialism.

§ 232. In criticism of current socialist theories we may begin conveniently with the idea of an alleged irrepressible class conflict arising from the systematic exploitation of the laborer. That there is a conflict of interests when employers and employees come to divide the product of industry among themselves, cannot be denied, because the more one party receives, the less remains for the other; but that a fair division is not and cannot be effected under the wages system, is a very different proposition. The socialist alleges that the division is always unfair because the capitalist, producing

nothing, withholds from the workman a part of the product of his labor. The argument rests upon the idea that labor, and nothing but labor, contributes to the production of a commodity; and that the value of a product depends solely upon the amount of labor required for its production. A more absurd theory can hardly be found in the history of economic speculation. The value of a product does not depend solely upon its cost of production; although that is the factor which controls the supply and, therefore, jointly with the marginal utility, determines the value. Furthermore the cost of production includes something more than mere labor, because abstinence, or waiting, is just as real and necessary a part of the sacrifices incurred by producers as the physical energy expended by the workman. The illustration given in another place (§ 64) should have made this point tolerably clear.[1]

When due account is taken of the sacrifice represented by abstinence, or waiting, and of the risks which the *entrepreneur* assumes when he establishes an independent

[1] Another illustration may be taken from the same acute writer, Boehm-Bawerk, from whom we have drawn the one given in § 64. A cask of new wine sells for $30, and the socialist would regard all of this sum as a value created by labor alone. A capitalist buys this cask and sets it aside for twenty years, the wine, meanwhile, improving with age until, at the expiration of the period, it sells for $100. Upon the theory of the socialist, it is impossible to explain how the difference of $70 was added to the value of the wine, since no labor has been expended from the day that this cask was placed in the cellar in order that it might age. The socialist, too, denies that any sacrifice is called for on the part of the man who invested $30 in such a way that nothing was secured from it for twenty years. His theory, in fact, is that the wine merchant robs the men who originally produced the wine and were paid all that new wine was worth, unless he turns over to them the $70 added to the value of the wine after it has aged for twenty years.

enterprise, it becomes clear enough that the laborer is not necessarily robbed when the capitalist and the employer receive their profits. This is not to say that, as a matter of fact, injustice is never done to the laborer; but simply that no wrong is necessarily done him by the action of the employer in withholding a part of the product. There is no iron law that holds wages down inevitably to a bare physical subsistence, as is proven by the fact that the remuneration of labor has steadily increased for half a century or more, and that the standard of living of the laboring classes has repeatedly advanced. If any class of workmen is so improvident that its members are willing to rear large families which they cannot support in a decent manner, the wages of that grade of labor will be low on account of the inordinate increase of the supply of laborers. If, however, laborers are intelligent and prudent enough to insist upon a comfortable standard of living, they can keep their wages far above the minimum necessary for the mere maintenance of life. If, in addition, they are offered educational facilities and are free to combine for lawful ends, the working classes are able to maintain tenaciously existing rates of wages, and, at each favorable opportunity, secure an increase. This is so clear that many socialists no longer contend that the wages system dooms the laborer to a life of constant or increasing misery; and merely argue that, even though wages have risen, the worker is robbed simply by reason of the fact that the capitalist receives any part of the product of industry. In fact, they now argue, in some cases, that socialism never really taught the theory of the progressive impoverishment of the laboring classes.

The wages system.

§ 233. When one examines the arguments which are believed to prove the existence of an irresistible tendency toward socialism, it appears that most of them turn upon the phenomena of large-scale production. In the field of natural monopolies, it is clear that combination is the only result to be expected; and that its growth inevitably brings us to the two alternatives of public ownership or public regulation, because unregulated private monopoly does produce discontent, as the socialists aver. But even if we concede that public regulation of private monopolies is sure to prove unsatisfactory, and that public ownership is to be the policy finally adopted, this still leaves the great fields of agriculture, manufactures, and commerce open to private enterprise. In the industries last mentioned the socialist thinks that the trust movement will result finally in the establishment of the régime of monopoly; but, as has been argued in an earlier chapter (§ 129), there are the best of reasons for rejecting such a conclusion. The force of competition will finally prove, outside of industries that are natural monopolies or depend upon natural monopolies, too strong for the calculations of both the trust promoter and the socialist. It seems logical and attractive — when small industries are seen to be gradually replaced by large, while large enterprises often combine into trusts — to affirm that there exists here a natural and inevitable law of development by which production is organized first in small establishments, then in large, and finally in establishments of the largest possible size — monopolies; but the facts of industrial growth are not, and never have been, so easily and logically explained. In some cases, as in the

Criticism of the alleged tendency toward socialism.

natural monopolies, the course of economic evolution is as the socialist alleges; but elsewhere opposing tendencies appear, and the outcome is different. The theory of the socialist does violence to the facts by endeavoring to accommodate them to a single procrustean formula.

The present economic régime.

Socialists draw a severe indictment against the present methods of organizing productive industry, and criticise them as irrational, planless, and wasteful. That there is some force in the arguments no one can deny, since at many points business is not conducted as efficiently as could be desired. Many of the defects in the present system, however, can be remedied; and, in fact, are continually being eradicated. The collection of statistics of production and consumption, for instance, and the careful study of markets are now proceeding upon a scale never before known, and further helpful developments in the same line are certain to occur. Competition, in all probability, will always entail some waste; but this is not an argument in favor of socialism, since that system would present still greater weaknesses.

Weakness of socialism.

§ 234. Under a socialistic régime the government, however it might then be constituted, would have to organize and conduct the great staple industries upon a national scale. This work would involve all the waste and possibilities of corruption that so often attend governmental enterprise; while there is every reason to believe that the administration of affairs would be, taken by and large, less progressive, energetic, and efficient than at present. Doubtless the methods of public administration can be improved, and perhaps they might be as its functions increased; but no one who has ever

had opportunity to compare the leisurely methods of the average government office with the conditions that prevail in the average private establishment will believe that, under socialism, productive industry would be managed as efficiently as at present.

A further difficulty would be encountered when a socialistic government should undertake to apportion the labor force of the country among the various occupations. Some callings are more pleasant or highly esteemed, and would be sought for much more eagerly than others. All competitors for preferment could not, obviously, reach the goal of their desire; and there would continue to be shattered hopes and disappointed ambitions, as at present. Our existing system, by a more or less impersonal method, succeeds fairly well in eliminating the inefficient, and securing the services of the most efficient in the highest positions. Favoritism and nepotism are far from unknown in industry, but they exist there to no such extent as in government service, since the inevitable penalty for them is business failure. Envy and discontent would continue to exist under socialism. They would be stronger, in fact, since disappointed competitors would witness so many cases in which advancement was secured through favoritism or corruption. One who watches the multitude of toilers that pours into a great city each morning and distributes itself through the factories, workshops, stores, and other establishments awaiting its coming, may well feel thankful that the hurrying throng is not seeking positions that are distributed by the political party that happens to command a majority of its votes.

Apportionment of labor force.

Most serious of all is the fact that, with production organized upon a socialistic basis, the very nerve of efficient industrial effort would be cut, at least for the majority of workers. At present we offer pecuniary gain as a reward of efficiency; and, from the lowest grade of labor to the highest, we apportion a remuneration that depends upon the value of a person's services. The love for gain is not the highest motive, but it is better than none; and it seems to be the one that appeals most strongly to the average man. Socialists urge that, under their system, the desire for social esteem would keep men at work, just as patriotism and other unselfish motives sometimes operate to-day. But what we want is not merely that public opinion or some other force shall keep men at work, but that people shall exert themselves as strenuously as they do at present under the inducement of personal gain. The picture of a society in which higher motives rule, and the welfare of all is the rule of action for each, presents undoubted attractions; but we have no experience with human nature which justifies the hope that it will speedily be realized.

Socialism and industrial efficiency.

Considered as a scheme of distribution, socialism presents almost as grave difficulties as it offers when viewed as a plan for organizing production. Socialists have always clamored for a just distribution of the product of industry, but have not always agreed as to what constitutes distributive justice. At present, however, they generally incline to the view that equality of income would be the fairest possible principle; and therefore earlier schemes for distribution according to needs or merit will not detain us. In any case, it is

Difficulties in socialistic distribution.

probable that equality would be the only practicable plan, on account of the difficulties that would follow if a government dependent upon popular suffrage should undertake to apportion wealth in any other way. Now equality of remuneration overlooks the varying needs and deserts of the recipients; and no one but the confirmed socialist can be impressed with the equity of awarding the same compensation to unequal industry, talent, and skill. Moreover, such a method of distribution would be likely to remove that stimulus to invention and enterprise to which we owe so much of our present economic progress.

Socialism, therefore, has fatal weaknesses whether considered as a scheme for the production or for the distribution of wealth. It may be suggested, furthermore, that the system would probably endanger freedom of thought and action if it should ever be carried into effect. With all branches of production in the hands of the government, it would be dangerous for any one to criticise the policy of the public authorities. At present people can find in private business a vantage ground from which they can safely criticise men and measures; but under socialism they would have no more freedom than officeholders now enjoy, in the United States or elsewhere. Socialists are no more tolerant of opposition, or even of differences of opinion within their own ranks, than other people, as the lively proceedings of their national and international conferences testify; and it would probably go hard with the luckless officeholder who should undertake serious criticism of the policy of an administration composed of enthusiastic advocates of a coöperative commonwealth. It is very doubtful, in-

Socialism dangerous to liberty.

deed, if a socialistic government would furnish the printing presses, paper, postal facilities, and public halls that would be needed for free speech and open discussion hostile to itself; and without these things, it would be impossible to rally an opposition party.

§ 235. Few people, if any, would care to assert that existing methods of production are perfect or that the present scheme of distribution always secures exact justice. But this much can be affirmed: private enterprise has been able to increase in a marked manner the production of wealth, and holds out a prospect of continued improvement; the present distribution of wealth has subserved fairly well the highest interests of our civilization, while the laborers, who make up the most numerous social class, have been able to improve constantly their position. Moreover, our present system secures reasonable opportunity for criticism and freedom for experimentation, so that it is possible to try to improve any features that are shown to be unsatisfactory. Rational criticism, enlightened public opinion, and resolute self-reliance in overcoming economic difficulties seem to offer the most practicable method of reforming and reshaping existing institutions. In some directions reform may best be secured by extending the activity of government; such cases can be dealt with as they arise. But, taking men as they are, and not as we would like to have them, it will probably be necessary, for an indefinite time to come, to appeal to the motive of personal gain in order to secure the best results in most branches of productive industry. Socialism, in fact, would probably cut the very nerve of industrial efficiency. **Conclusion.**

FOR SUPPLEMENTARY STUDY

The Single Tax: GEORGE, Progress and Poverty; HADLEY, Economics, 470–474; SEAGER, Introduction to Economics, 517–525; SHEARMAN, Natural Taxation; SELIGMAN, Essays in Taxation, 64–94.

Socialism: ELY, Socialism and Social Reform; ENSOR, Modern Socialism; MENGER, The Right to the Whole Produce of Labor; SCHÄFFLE, Quintessence of Socialism; VANDERVELDE, Collectivism.

CHAPTER XV

GOVERNMENTAL REVENUES

I. The Various Branches of Revenue

§ 236. In performing their various functions governments have need of ample revenues, which must be drawn from the incomes of their citizens. Apart from loans, which are but a temporary form of income, five main branches of public revenue may be enumerated. **Public revenue.**

§ 237. The first class comprises revenues drawn from domains and public industries. Domains are lands owned by the government, and are often of considerable financial importance in European states. The United States, however, which has had a magnificent western domain, has followed a different policy. Believing that the resources of the country would be developed most rapidly by allowing the public lands to pass into private ownership, the federal government has disposed of its holdings as fast as possible, so that to-day receipts from land sales form but an insignificant item in the national revenues. **(1) From domains.**

Governments conduct many kinds of public industries, such as waterworks, gas and electric lighting plants, railways, and postal and telegraph systems. Sometimes these enterprises are operated at a loss, as is the case with the postal service of the **And public industries.**

United States, in which the annual deficit has ranged in recent years from $2,000,000 to $10,000,000. Not infrequently a profit is derived from public industries; Prussia, for instance, draws a large net revenue from her railroads, while England, France, and Germany realize substantial sums from the post office. In general, however, financial considerations are not the chief reason for bringing these enterprises under public management. The purpose has been rather to avoid the evils of monopoly, to extend the service more widely than private companies could do, or to husband natural resources such as forests.

§ 238. Fees constitute a second form of public revenue. They are charges which governments make for services performed mainly in the public interest but conferring a distinct, measurable benefit upon the payer. Probate fees, court charges, fees for recording mortgages and deeds, and for marriage licenses are common examples of this sort of revenue.

(2) From fees.

§ 239. A third branch of revenue comprises receipts of a very miscellaneous character. Fines and penalties form a small item of income. Sometimes property reverts to the government upon the failure of heirs. In a number of countries public lotteries are still maintained, and yield considerable income. Finally, governments are occasionally the recipients of gifts, which, however, are usually for some specific purpose, as a park, a library, or a schoolhouse, and do not form a part of the general public revenues.

(3) From miscellaneous sources.

§ 240. A fourth form of revenue has become very important in the finances of American municipalities, but

has been less often utilized in other countries. This is the special assessment, which may be defined as "a compulsory contribution, levied in proportion to the special benefits derived, to defray the cost of a specific improvement to property, undertaken in the public interest." When new streets are opened or old ones are paved, when drains and sewers are constructed or when public squares or parks are laid out, the owners of adjoining real estate, which is enhanced in value as a result of such improvements, may justly be called upon to pay a part or even the whole of the cost of such public works. The entire community may be interested in such improvements; and, accordingly, it commonly defrays a part of the expense out of its general revenues. But the owners of abutting real estate derive a special, measurable benefit from such public works, and should in justice bear a part of the burden thus incurred. Special assessments have become an important and probably a permanent feature of American municipal finance, since they have proved well adapted to the needs of young and rapidly growing cities.

(4) From special assessments.

§ 241. Taxes constitute the final, and under modern conditions the most important, branch of public revenue. They may be defined as compulsory contributions exacted by governments from persons within their jurisdiction for the purpose of defraying general public expenses. They differ from fees or special assessments in that they are not charges for special, measurable advantages or services which the payer has received from the government. The actions of the government in protecting persons and property, or in ministering

(5) From taxes.

to the general welfare in other ways, do not confer upon particular citizens distinct and measurable benefits; they are of the highest importance to all, but they bestow common benefits upon the whole body of citizens, so that it is impossible to estimate the precise advantages that accrue to individuals. For this reason all persons within the jurisdiction of the government may be called upon to contribute to its support, and taxes are properly defined as compulsory contributions designed to meet the *general* public expenses.

§ 242. If taxes are honestly and wisely expended, the people receive a large return for the sums contributed for the support of the government. But it should always be remembered that a tax is a deduction from the wealth of the community and a burden upon the taxpayers. In a New England town meeting the truth of this statement is keenly realized whenever public expenditures are authorized. But when the operations of government are farther removed from the scrutiny of the people, and revenues are raised by customs and excise duties which are concealed in the prices of commodities, or by corporation and inheritance taxes which are less felt by the mass of the citizens, there is danger that this fact may be overlooked. From 1885 to 1890 the federal government annually collected surplus revenue that amounted to even more than $100,000,000, and the evils of such a condition were not clearly recognized by the people. The thoughtful student hardly needs to be told that taxation can furnish the government with no "magic fund," out of which lavish expenditures can be made without cost to anybody. Yet it sometimes appears that this delusion is more commonly entertained than it is

The "magic fund" delusion.

pleasant to contemplate. The only result of popular error upon this point must be extravagance and corruption in the management of public expenditures.

§ 243. The just distribution of the burden of taxation is a topic that occupies much space in treatises upon public finance, but it cannot be said that anything like a final conclusion has been reached upon the subject. Adam Smith's famous maxim that the "subjects of every state ought to contribute toward the support of the government as nearly as possible in proportion to their respective abilities" has gained wide acceptance; but it has not been so easy to agree as to what constitutes ability, and how it shall be measured. The general theoretical problems involved in the question could not, in any case, receive adequate treatment in the space at our command, and must of necessity be set aside. Something may be said, however, concerning the various things which have been proposed as tests or criteria of the taxpayer's ability to bear public burdens.

Just distribution of taxes.

Consumption or personal expenditure is the poorest of all measures of ability, since persons with large incomes do not consume proportionately more than those of moderate or small means; while people who must support large families necessarily expend more than persons of the same income who are differently situated. Taxation of articles of common consumption is, therefore, a method of taxing people's necessities rather than their ability. A second criterion has been found in the property which each person owns. This is certainly preferable to expenditure, but is very far from perfect. All property is not equally productive; and

Various measures of ability.

some may be either wholly unproductive or a positive burden upon the owner, who may, for instance, be "land poor." Then, too, many persons who have accumulated but little property receive wages or salaries for their labor, and are able to contribute something to the support of the government even though they are not property holders. Finally, income has been considered the true measure of ability, and, without doubt, it is superior to either of the other criteria. But income is not an unexceptionable measure, since it is not always a perfect test of ability. In the first place, an income derived wholly from personal exertions does not indicate the same ability that an equal revenue drawn from invested property represents. The former terminates the moment that the power to labor ceases, so that a considerable part of it must be saved in order to provide for the future; while the recipient of the latter may spend his entire income without depriving himself of the means of future support. And, in the second place, ability to bear public burdens varies with the demands made upon each person's resources. Two incomes, for instance, may be equal; but the recipient of one may be a single man, while the recipient of the other has an expensive family to support. In such a case it is evident that equal incomes do not indicate equal ability to contribute to the government.

The practical outcome.

Yet even though no perfect measure of ability is attainable, it is not impossible to secure approximate justice in apportioning the burden of taxation. Income may be made the chief test of the taxpayer's ability, and something can be done to correct the inequalities that result in certain cases from the adoption of such

a standard. Funded incomes, for instance, can be taxed more heavily than those derived from personal exertions — a thing that can be accomplished by levying taxes upon property as well as upon income. Furthermore a certain minimum sum may be exempted from the operation of taxes that are levied directly upon revenue, and a rough allowance can in this way be made for the demands which the maintenance of a family makes upon the possessors of small incomes.

§ 244. Associated with the problem of justice in taxation is the question whether the tax rate should be proportional or progressive. A tax is proportional when it imposes a fixed rate, say two per cent of the value of all objects assessed, irrespective of the total amount of the property or income of each taxpayer. Taxes are regressive when the rate increases as the amount of property or income decreases. Thus a fixed business license tax of $20 upon all retail storekeepers would be regressive, since the rate of taxation would increase as the size of the business decreased. Finally, taxes are progressive when the rate increases as the taxable property or income increases. Thus a progressive income tax may impose a rate of one per cent upon incomes of $1000 or less, and may levy higher rates upon larger incomes.

Proportional, regressive, and progressive taxation.

The injustice of a regressive tax must be evident to all, but there is a difference of opinion concerning the merits of proportional and progressive taxation. The opponents of a progressive rate denounce it loudly as a measure of confiscation; but it seems probable that a progressive tax, if it can be rigidly collected from

Merits of the methods.

the larger incomes, corresponds more nearly than a proportional tax to the demands of justice. This is because, as income increases, ability to bear public burdens probably increases, at even a more rapid rate. A tax of two per cent may mean the sacrifice of articles of decency and necessity for a man who must support a family out of an income of $500, while a man who enjoys an income of $10,000 will feel but slightly the payment of a tax of the same rate. More than this, the possession of a large income gives a person a great advantage in the acquisition of future riches, because it is the first thousand dollars of a fortune that is hardest to acquire, since wealth begets wealth. Such considerations seem to justify a moderate increase of the rate of taxation as fast as the property or income increases. But this is true only upon the condition that the tax is well administered and rigidly collected. Great practical difficulties are encountered at precisely this point. In this country proportional taxes upon property or income are poorly enforced, and fall with undue weight upon persons of small or moderate means. Until we have administrative machinery that will enable us to reach large fortunes with certainty, progressive taxation would probably serve only to increase the inequalities that inhere in our existing tax systems.[1]

II. Federal Taxation in the United States

§ 245. The federal government has always derived a very large part of its revenue from customs duties imposed

[1] In the case of inheritance taxes it may be possible to enforce with reasonable certainty a progressive rate, since we have, as will be explained later, fairly satisfactory methods of reaching the larger estates.

upon commodities imported into the United States. These taxes are practically reserved for its exclusive use by that clause of the Constitution which forbids any state to "lay any imposts or duties on imports or exports." They had, in fact, prior to the Civil War, furnished nearly the whole of the national revenues in times of peace; in 1860, with a total income of $56,054,000, the customs amounted to $53,187,000. Since that period other taxes have been required in order to meet the heavy charges occasioned by the war and the more lavish scale of general expenditure; but in 1903, out of a total revenue of $560,396,000, the customs brought in $284,479,000.

Customs duties.

Import duties may be either specific or *ad valorem* (§ 162). The latter are open to the objection that they lead to the undervaluation of imports and so facilitate frauds in the collection of revenues. Specific duties are easier to administer and more difficult to evade, but are not free from serious objections. Goods of the same general character often differ widely in value, and a simple specific duty falls with undue weight upon the cheaper grades.

Specific and *ad valorem* duties.

If customs taxes are to yield a large revenue, they must be imposed upon articles of general consumption; and the bulk of our receipts has always come from a few commodities of this kind. In 1903, for instance, not less than $63,505,000 was collected from sugar and molasses. This was practically a per capita tax of nearly eighty cents for every man, woman, and child in the United States, since the consumption of sugar is almost universal; and it amounted to not less than

Customs duties are regressive.

$4 for every family of five persons.[1] Sugar is an extreme case; but, in general, the consumption of the goods that yield most of the revenue is not at all proportionate to the taxpayer's income, so that a customs tariff is necessarily a form of regressive taxation. Moreover, in so far as duties levied for the purpose of protection tend to increase the prices of domestic commodities, they take out of the consumer's pocket much more than the government receives.[2]

§ 246. Excise duties are levied upon commodities of domestic production. Except for a few years after the adoption of the present Constitution, and in the War of 1812, they were not used by our federal government prior to the Civil War. Moreover, the freedom of commercial intercourse between the states was such that no commonwealth could levy an excise without injuring or destroying the industry upon which it might fall. But in 1862 and 1864 Congress was obliged to establish a formidable system of excise taxes upon almost all conceivable articles, by which, in 1866, an

Excise duties.

[1] Duties on wool and woolen goods, cotton fabrics, vegetable fibers and their products, and iron or steel goods, brought in $89,618,000. These goods are widely used, though the imported products are not in such universal use as sugar. Such articles as imported liquors, silks, and jewelry, the luxuries of the rich or well-to-do, yielded only $33,119,000. Tobacco, widely though not universally used, yielded $21,892,000.

[2] In 1903, for instance, the United States collected $16,865,000 from imported iron and steel, but the steel trust taxed the country several times this amount. In that year, to take the clearest illustration, the imports of steel rails were 122,444 tons, upon which, the duty being $7.84, the United States collected less than a million dollars. But upon the 2,924,956 tons of rails made and consumed at home, our people paid a tribute of $7 or $8 a ton to the steel rail pool which added about the amount of the duty to the price charged domestic consumers.

internal revenue of not less than $190,000,000 was obtained. After the war taxation was reduced, and most of the excise duties were repealed; but the expenditures remained so much larger than they had been in 1860 that the taxes on spirits, beer, and tobacco had to be retained, and they have now become a permanent part of our revenue system. In 1903 the internal revenue receipts aggregated $230,740,000.[1]

Machinery of collection.

Our internal taxes are collected by means of stamps which must be affixed to all packages containing the dutiable articles, in such a manner that the stamps will be destroyed when the goods are opened for consumption. In addition, producers of these articles are subject to a certain amount of supervision. The service is now efficient, and there is not much evasion except in mountainous districts of the South and certain large cities, in which spirits are sometimes illegally distilled with the comparatively simple and inexpensive apparatus that can be employed. For a good many years, however, after the tax on spirits was introduced in 1862, there was a large amount of evasion, and at one time corruption within the internal-revenue service assumed such proportions as to cause a national scandal.

Conclusions concerning excise taxes.

During the late war with Spain the rates imposed on beer and tobacco were largely increased and some additional articles were taxed, but these duties have since been repealed. The taxes now levied upon liquors and tobacco supply a large revenue in time of peace,

[1] In detail the receipts were: from spirits, $131,953,000; from beer and ale, $47,547,000; from tobacco, $43,514,000; oleomargarine, filled cheese, mixed flour, renovated butter, $896,000; balance from former years, etc., $6,828,000.

and a few other articles can furnish a considerable additional income if it should ever be needed. Like customs duties, they are regressive, and, therefore, unjust unless other taxes are laid upon wealth or income in order to compensate for the inequality of the excise system. Yet neither our own nor any other country can dispense with the large sums now derived from taxes on consumption; and the chief thing that commends excise duties, like customs, to general favor is that they enable a government to pluck the largest amount of feathers with the smallest amount of squealing.

Ease of collection.

This ease of collection is due to the fact that such taxes are concealed in the prices which citizens pay for commodities, and are collected in small amounts upon a large number of purchases. The collection of poll, property, or income taxes requires the presentation of a formal demand for a considerable sum of money, which the payer cannot always spare without more or less inconvenience. It is easier for the average person to pay, a few cents at a time, a larger tax that is collected by customs or excise, than to meet a direct demand for the payment of other taxes. At the same time, however, account must be taken of the further fact that the so-called indirect taxes, like customs or excise, for the very reason that they are less felt, lead the people to display less interest in the expenditure of the public money. This has caused a vast amount of extravagance in our national expenditures, and will continue to do so. Good citizenship, which implies a keen interest in all the details of public affairs, seems to be promoted more effectually by a system that places at least a part of the burden of taxation directly

upon the shoulders of the taxpayer, instead of concealing it in the prices that he pays for articles of common consumption.

Taxes on transactions.

§ 247. The Civil War led to the establishment of many duties upon business or legal transactions in which written instruments were employed; and again in 1898 stamp taxes were levied upon bills of exchange, transfers of stocks and bonds, bills of lading, bank checks, telegraph messages, express receipts, and some other objects. In other countries transaction taxes form a part of the permanent revenue system; but, with us, they have been reserved for employment in special emergencies. If additional income must be had, the use of such a resource is legitimate; but, on purely economic grounds, the taxation of transactions is not to be commended. It is next to impossible to graduate these taxes according to the amount of the transaction, except in a few cases; so that the burden cannot be equitably distributed. Then, too, they have the effect of interfering with the normal course of business, since they oblige taxpayers to avoid so far as practicable the transactions upon which duties are laid. When multiplied unduly, they become extremely objectionable; and it is fortunate that this country has been able to reserve them for serious emergencies.

Taxation of incomes.

§ 248. During the Civil War Congress was obliged to establish an income tax, which, in 1866, yielded the sum of $72,982,000. Up to that time this form of taxation had been used by a few states without much success,[1] but had never been tried by the national

[1] At one time or another about sixteen states have attempted to tax incomes. The result has invariably been failure.

government. The federal tax was discontinued in 1872, and thereafter taxation of incomes was practically unknown in the United States. In 1894, in order to obtain additional revenue and equalize the burden of taxation, Congress established another tax upon incomes, exempting all of less than $4000; but before it could go into operation, this law was pronounced unconstitutional by the Supreme Court.

The federal Constitution provides that representatives and direct taxes shall be apportioned among the several states "according to their respective numbers." Congress has attempted to levy such an apportioned tax only three times, the last one being called for in 1861. At the present day, the various sections of the country differ so widely in respect to wealth that any tax apportioned on the per capita basis would be repugnant to all ideas of justice. Earlier decisions of the Supreme Court had indicated that only land and poll taxes were considered to be direct, within the meaning of the Constitution; and accordingly the income tax of the Civil War had been levied as an indirect tax, without apportionment among the states, upon incomes wherever they might be found. The law of 1894 followed the same method, but the Supreme Court decided that an income tax is a direct tax and can be levied constitutionally only by the rule of apportionment; so that the statute was declared unconstitutional. This decision, which reversed all precedents, was reached only by a divided court; and its effect is to make federal taxation of incomes impossible, since an income tax apportioned on the per capita basis would levy in some states a rate six or seven times as high

Constitutional questions.

as would be collected in others. Such a measure would be a shameful mockery of justice, and will never be attempted, since the inequalities would be too patent to be endured.

Yet the experience of other countries shows that income taxes find increasing favor as just and lucrative sources of public revenue. In Great Britain and elsewhere, such taxes work better the longer they remain in operation, and now, after constant improvement in methods of administration, are no longer the subjects of serious criticism. In the United States the income taxes tried by various states and the federal government have invariably employed the perfectly hopeless method of calling upon taxpayers to declare their whole incomes, with the result that there has been widespread evasion. The example of England shows that it is possible to discover and tax incomes with a minimum amount of evasion and vexation to citizens by the very simple expedient of levying the tax upon the sources from which the incomes are derived. The rent of real estate is ascertained readily enough, and is collected from the occupier, who, if a tenant, deducts it from his rent. If the land is mortgaged, the mortgagor, after paying the tax upon the full value of the property, is allowed to deduct a proportional part from the interest which he pays to the mortgagee. Incomes drawn from corporation securities are taxed at the source, by requiring the corporations to deduct the tax from all interest and dividends that they pay out. Salaries of corporation employees and of public officials can be reached in the same manner; so that the greater part of all incomes can be taxed without

The experience of other countries.

the possibility of evasion, and without asking individuals to make declarations. By means of her income tax Great Britain is able to correct the inequalities that arise from the operation of customs and excise duties; and, in time of war, she finds it an invaluable resource by which the revenue of the government can be largely and quickly increased with the least possible disturbance to industry. From such revenue, however, the United States is at present debarred.

III. State and Local Taxation in the United States

§ 249. American states, counties, cities, and towns have long derived most of their revenue from the general property tax, which is supposed to be levied upon all the property, both real and personal, in the possession of the taxpayers. In 1890 the total amount of the state and local receipts was $584,835,000; and of this sum, taxes on property yielded about seventy-five per cent.

The general property tax.

There are differences in the methods of administering the tax, but the laws of the various states require the assessors to make an exhaustive enumeration and valuation of all kinds of taxable property. Generally, too, notably in the case of personal property, taxpayers are called upon to make detailed statements of their possessions; and often this must be done under oath. The assessors have power to correct these declarations whenever there is reason to suppose that a full disclosure has not been made; while the taxpayer can appeal to higher officials, or eventually to the

Administration of the tax.

courts, for rectification of erroneous assessments. Property is supposed to be rated at its full value, and the tax raised for state purposes is levied among the cities or other local units in proportion to the respective valuations of their taxable property. To the quota which each community must raise for state purposes, the sums needed for local use are added, and the total is then assessed upon taxable property at a rate which will bring in the amount of money required.

Unjust apportionment of the property tax.

In its actual operation the general property tax causes great inequality in the distribution of the tax levied for state purposes. Each board of local assessors has a strong inducement to undervalue the taxable property in its own district, because by such a course the amount of the state tax apportioned to the locality will be reduced. The result is that property is almost never rated at its full value; while the assessed valuation may be only ten or twenty per cent of the true valuation in some sections, and as high as eighty or ninety per cent in others. It follows necessarily that the burden of state taxation is distributed most unjustly among the various local units. To remedy this difficulty state boards of equalization have been formed, and authorized to correct these inequalities of apportionment. But this could be done only by an actual revaluation of all the property of the state; and the boards of equalization, at the best, can merely proceed by rough guesswork. In many cases, moreover, unseemly contests ensue between city and country interests, each seeking to control the boards and to increase the other's share of state burdens.

A second cause of the grossest injustice is the failure of this tax to reach personal property. A large part of the wealth of a modern community consists of corporation stocks and bonds, mortgages, notes, book accounts, and other forms of intangible personalty that easily escape the sharpest investigation of the assessors. Moreover, these officials are usually elected by the votes of the men whom they have to assess, and they are not inclined to adopt very vigorous means of discovering the less tangible property of the voters. Most of the personal property that is actually reached consists of stock in trade, machinery, and live stock or other farm capital. In 1896 nearly two thirds of the personalty taxed in Massachusetts consisted of tangible goods of this character. In 1850 the total assessed valuation of personal property in all the states was $2,125,000,000, while real estate was valued at $3,899,000,000. In 1890 the personalty was assessed at only $6,516,000,000, while realty was assessed at $18,956,000,000. It will be noticed that in forty years the assessed valuation of personal property had increased by only $4,391,000,000; while that of real property increased by $15,057,000,000. Now it is a well-known fact that during this period there has been a very great increase of personal property, especially in its less tangible forms. Yet its assessed valuation now forms a smaller proportion of the total property taxed than was the case in 1850. In the State of New York the proportion of personal property has constantly decreased, until nine tenths of the burden of taxation falls upon real estate; while in the city of Brooklyn, in 1895, personal property

Its failure to reach personal property.

bore *less than two per cent of the total tax.* In New York the richest men in the country are assessed for only a few hundred thousand dollars of personal property, when their known investments in corporate securities yield annual incomes that amount to millions. It may be stated as a general principle, therefore, that the taxation of personal property "is in inverse ratio to its quantity"; and that "the more it increases, the less it pays." An inevitable result of this is that state taxation falls with undue weight upon the country districts, where there is little intangible wealth, and personal property exists in the form of household goods, live stock, and farm implements, none of which can hope to escape the assessor.

Unjust valuations of real estate.

One other abuse arising from the present property taxes must not be overlooked. While all real estate can easily be found by the assessor, the valuations of different properties are often most unequal. As has been seen, undervaluation is the general rule; and it is probable that, throughout the country, the assessment of real property does not exceed one half of its actual value. The systematic undervaluations that prevail open the door to gross abuses in some of our large cities, where the most valuable lots and buildings are sometimes assessed much more lightly than smaller properties. Thus in Chicago, a few years ago, it was found that seventy of the choicest pieces of real estate were assessed at less than nine per cent of their true value; while eighty small estates, worth $4000 and less, were assessed at almost sixteen per cent of the actual selling price.

But we cannot stop even here in our statement of the evils that attend the present administration of the property tax. Existing laws offer to taxpayers terrible inducements to commit frauds. When each citizen is compelled to declare under oath the full value of his property, perjury is the usual result; for an honest man, who desires to pay all that is justly due from him, knows that, if he tells the whole truth, he will have to bear two or three times his fair burden. Thus our present system punishes honesty with a double load of taxes, and allows the dishonest and unscrupulous tax dodger to escape.

Demoralization caused by the tax.

Our general property tax has been shown to be largely a tax upon real estate, since most personal property, except that of a tangible form, escapes the assessors. In its apportionment there are the grossest inequalities between different towns and counties, while between individual citizens its burdens are often distributed without the remotest approach to justice. More than this, it has become a fruitful source of demoralization, and is systematically educating our people in habits of fraud and perjury. In theory the tax is unjust as a main source of public revenue, since property is not the best measure of ability; and in practice "the general property tax as actually administered is beyond all doubt one of the worst taxes known in the civilized world." It has been abandoned in most other countries as a principal form of taxation, and is condemned by practically all students of finance.

Conclusions concerning the property tax.

§ 250. Many of our American commonwealths levy poll or capitation taxes. These are imposed at a uni-

form rate, as $2 per poll, upon all males between the ages of 20 or 21 and 45 or 60. They are poorly collected, and are usually evaded by all persons who do not have to pay taxes upon property. The total receipts, therefore, are small. In a few states payment of a poll tax has been a condition precedent to voting, with the result that each political party paid the taxes of many of its voters, and corruption necessarily followed. The poll tax has been abandoned in most civilized countries, and must be viewed as an antiquated financial expedient. It is, moreover, unjust in its operation, since it exacts equal contributions from all, regardless of the different abilities of taxpayers.

Poll taxes.

§ 251. The failure of the general property tax to reach the stocks and bonds of corporations has led various states to adopt a much more successful expedient, the taxation of the corporations themselves; and as the number of business corporations has increased, corporation taxes have become increasingly important in state finance. It is hardly necessary to add that the reason for the success of the new method of taxing corporate property is that it is far easier to deal directly with a corporation than to discover and assess its securities in the hands of individual holders.

Corporation taxes.

In its usual form the corporation tax applies to special kinds of companies, such as those engaged in banking, insurance, railway transportation, or the telegraph and express businesses. Banks are commonly taxed upon their capital stock, the corporations being required to withhold the amount of the tax from the dividends paid to the stock holders;

Special corporation taxes.

and, in addition, they may be taxed locally on their real estate. Railroads are taxed in a great variety of ways, as upon their gross earnings or the value of their outstanding securities. When a road operates lines in different states, the tax paid in any one is levied upon the amount of earnings or securities that corresponds to the proportion which the mileage operated in that state bears to the total mileage of the company. Sometimes these special taxes on corporations are in lieu of all others, state or local; while in other cases the real estate and other tangible property may be taxed locally, and a tax upon the balance of the property may be paid into the state treasury. In some cases the whole tax is reserved for state purposes, and in others a considerable part is distributed among the local governing bodies.

The general corporation tax.

Pennsylvania and New York have established general corporation taxes which apply, with certain exceptions, to all companies doing business within their borders; while Massachusetts and a few others have taxes that apply to domestic corporations. The diversity of practice is so great that it is impossible to enter into a discussion of details; and we shall have to leave the subject with the general remark that it would seem desirable to replace special taxes with general laws, which, while applying to all corporate enterprises, should vary the methods of procedure so as to secure the best result in each case. If the idea of reaching securities in the hands of the holder is to be given up, and there is every reason why it should, all corporate enterprises should be brought within some general scheme of taxation by which they would be adequately taxed

once, and once only. The proceeds could be divided between state and local authorities in such manner and proportions as seem advisable.

The revenue now derived from corporations by some of the states is large; and sufficient in some cases, in addition to inheritance and certain other taxes, to make it unnecessary to tax property for other than local purposes. It seems certain that the development of the corporation tax will continue, and that it will become a chief reliance in many commonwealths in which corporate enterprise is largely developed. The chief difficulties encountered are of a legal character, and arise from the fact that corporations chartered in one state do business in many others. Sometimes these difficulties have proved serious, but some way of overcoming them will probably be devised. By developing corporation, inheritance, and license taxes to a point where they will supply all the needs of the commonwealths, the states can cease to tax property, and can allow the local units to tax tangible wealth in their own way. Such a separation of the sources of revenue will give to the state those taxes which the local bodies could not administer in a satisfactory manner; and it will allow the towns or counties to tax real estate fully and justly without the unfortunate pressure now exerted upon them by the fact that a state tax is apportioned upon the basis of the local valuations. This is the most important and desirable reform in the whole field of state and local finance.

A desirable reform.

§ 252. License taxes upon various business and professional pursuits have been often employed in the United

States. In times of emergency the federal government has made extensive use of them, but it now retains only moderate licenses for dealers in malt or spirituous liquors. Practically all of our cities, however, and many of the states impose license taxes upon certain occupations. In the cities of the South a very extensive system of business taxes exists, which frequently tends to restrict competition from new enterprises and bears with very unequal weight upon the smaller establishments. Elsewhere licenses are confined to a few occupations, such as those of liquor dealers, peddlers, pawnbrokers, and the like, and have other purposes oftentimes than the mere collection of revenue. From a financial point of view, liquor licenses exceed all others in importance, being oftentimes the source of large revenues that may go to the state as well as the local treasuries. In Massachusetts and New York, for instance, the share received by the state from liquor licenses is a very important item of income.

License taxes.

§ 253. The inheritance tax, as it is popularly called, is imposed "on the devolution of property, whether real or personal, whether by will or by intestacy." It is extensively employed to-day in Europe and Australia; and has been introduced, in some form, in most of our states. In many of our commonwealths only collateral inheritances are taxed, but in some cases direct inheritances are also included. The tax has met with such general success that its adoption by other states seems merely a question of time.

The inheritance tax.

In levying the inheritance tax it is customary to exempt a certain minimum amount of property from its opera-

tion, or to exempt entirely bequests for educational, charitable, or religious purposes. The rate is often progressive, the progression being most marked for inheritances passing to collateral heirs or persons not related in blood. Administration is not difficult, since most estates have to pass through the probate court in order to effect a just distribution of the assets, so that, with proper provision for gifts passing *inter vivos*, the collection of the tax is fairly certain and inexpensive. In this case the imposition of progressive rates can be defended because adequate machinery exists for enforcing payment of the tax. In the younger states the yield from such taxes is not very large, but they furnish a considerable revenue in the older commonwealths, and are a highly desirable form of state taxation. In combination with corporation and license taxes, the inheritance tax should be developed to a point that will make it possible for the state governments to dispense with the taxation of property.

Methods of taxing inheritances.

§ 254. Our various local governments should derive much more revenue than is secured at present from public franchises and all other public privileges. There are many indications that this will be done in the near future, because the pressure of taxation has forced upon the attention of property owners the fact that valuable franchises are now given away without adequate compensation. The receipts from such sources would supply a considerable portion of the revenues required by our cities. License taxes are also available for local purposes; large receipts already accrue from those upon the sale of liquors, but others should be

Local taxation.

employed with moderation. What other local revenues might be needed could easily be provided by the exclusive right to tax real estate. In 1890 our state and local governments raised $443,096,000 by the taxation of real and personal property. Real property made up 74.4 per cent of the total assessed valuation, and furnished consequently $329,500,000 of the entire receipts from this tax. It is evident, therefore, that real estate can supply all the revenue needed for local purposes after other resources have been properly utilized. Local assessors, moreover, would be under no external compulsion to undervalue taxable property, and this tax could be assessed much more equitably than at present.

FOR SUPPLEMENTARY STUDY

General: HADLEY, Economics, 447–484; NICHOLSON, Political Economy, III, 254–415; ADAMS, Science of Finance; DANIELS, Public Finance; ELY, Taxation in American States and Cities; SELIGMAN, Essays in Taxation.

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